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Haute école de gestion
Genève

Potential of Sharia-Compliant Investments

Bachelor Project submitted for the obtention of the
Bachelor of Science HES in International Business Management

by

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Declaration

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Geneva, August 19th 2016

Mohamed ISHUAYED

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Executive Summary

Islamic finance and Sharia-compliant investing has seen substantial growth over the years. As more investors are interested in becoming fully Sharia-compliant, the question of what may they be giving up in exchange arises. This has led us to analyze the potential of Sharia-compliant investments.

It is well known that having a Sharia-compliant investment portfolio could be rather restrictive as some sectors and investment instruments are forbidden such as tobacco, alcohol, gambling, pork products, conventional interest based financial and insurance institutions, and conventional fixed income.

In our study, we wanted to provide quantitative proof of any differences an investor may encounter if he were to invest in Sharia-compliant equities and fixed income compared to their conventional counterparts.

We were able to observe that even though Sukuk is often analyzed as a conventional bond, it is substantially different in its underlying risks and payoff structure. The Sukuk market is gaining steam, but it lacks geographical diversity. Another issue we observed with Sukuk is the lack of liquidity. The demand for this type of product is much higher than the supply. Western countries should follow the lead of the United Kingdom and facilitate the issuance and holding of Sukuk securities.

As for the equities market, we compared a Sharia-compliant index with an equivalent conventional index across three regions: global, United States and Europe. Our findings provide proof that since 2003, in all three regions, the Sharia-compliant indices have outperformed their conventional counterparts while taking on similar or lower risk profiles.

Our findings suggest that Sharia-compliant investing has great potential from a financial and economic point of view. Financially, as explained above, an investor can expect to perform as well as or better than the rest of the market. Economically, investing in Sukuk rather than conventional fixed income means that you are making a bigger impact on society as a whole; because when investing in Sukuk, you are financing a real project.

The potential of Sharia-compliant investing will depend heavily on the continued growth of Sukuk certificates and further understanding of their valuation and pricing.

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1. Introduction

Islamic finance and Sharia-compliant investing in its current form has existed since the middle of the 1970s. However, in recent years they have seen an exponential growth in interest. According to The World Bank (The World Bank, 2015), Islamic finance has grown at a pace of about 10 to 12% annually over the past decade, with global Sharia-compliant financial assets being estimated at USD 2 trillion in 2015.

In 2003, Islamic Financial assets were estimated at USD 200 billion, according to the IMF (IMF, 2015). The growth of Sharia-compliant assets can be credited to the growth of the world's Muslim population, making about a quarter of the world's population, and the awareness of Muslim investors about such products.

Over the past few years, interest in Islamic finance has grown beyond the typical hubs in the Middle East and Southeast Asia. Western countries, such as the United Kingdom have facilitated the use of Islamic products such as the issuance of Sukuk certificates, which are the Sharia-compliant equivalent of conventional bonds. Governments of Luxembourg, the United Kingdom and Germany have gone as far as to issue sovereign Sukuk securities to fund specific projects.

Even with the widespread growth of Islamic Finance, many individual investors in western countries are unfamiliar with its concepts. Due to the complexity of Sharia-compliant investments, Islamic investors have to rely heavily on portfolio managers to help them select their products. Conventional asset allocation and portfolio management are not suitable for a Sharia-compliant investor, which has led us to investigate the potential of Sharia-compliant portfolio management and compare it to its conventional counterpart.

Investing in Sharia-compliant products usually entails many costs which could lead to lower returns for investors. Through our study, we would like to analyze the potential of these products from an investor's point of view.

1.1 Literature Review

Oxford dictionary's website defines Sharia as: "Islamic canonical law based on the teachings of the Koran and the traditions of the Prophet (Hadith and Sunna), prescribing both religious and secular duties and sometimes retributive penalties for lawbreaking."

In Islamic finance, it is important to take into consideration the central position of Sharia laws. As defined above, Sharia laws directly impact the way people invest. Over time, Sharia Boards were introduced as a way to make sure investments are compliant with the Laws. Sharia Boards are composed of highly regarded Islamic scholars. Since the Board gives its approval for investments, they have to be well respected for people to consider their advice.

According to Bassens, Derudder and Witlox (2011) there is evidence of a "transnational Sharia elite." Through their study, they have been able to see that some well-respected Islamic scholars appear in many different Sharia Boards all over the world. These "Sharia elite" are able to shape Islamic finance through their separate rulings and through their influence over many different Boards.

Due to the somewhat subjective nature of some Sharia Boards, we are able to find some discrepancies in the way different Boards go about their compliance. Conservative scholars often have a tougher screening for Sharia-compliant investments, whereas more liberal ones may use higher thresholds. This has led Feisal Khan (2010) to question the whole concept of Islamic finance, discussing the fact that financial institutes do their best to find Scholars that pass their product as Sharia-compliant just to be able to sell it to investors.

Ulrich Derigs and Shehab Marzban (2009) also discuss the inconsistencies they found in the screening process done by different well known Islamic indices. They question the way current portfolio management is done. For the moment, Sharia-compliant fund managers and portfolio managers only select assets that are Sharia-compliant themselves thus restricted their investment universe and their potential returns. The authors propose a new way of making a Sharia-compliant portfolio. Their idea is to consider the portfolio as a separate entity that has to be Sharia-compliant in itself. Instead of have each separate asset in the portfolio Sharia-compliant. Through their study, they are able to find Sharia-compliant portfolios with characteristics that are very similar to traditional portfolios.

1.2 Methodology

Islamic Finance is a vast and sophisticated industry that has gone through many developments over the years; however, we wanted to concentrate our research more specifically on individual investors and the different Sharia-compliant instruments they may be confronted with.

Sharia-compliant investing can reduce rather significantly the investment universe due to the screening process done for non-Sharia compliance. We wanted to study if the reduced investment pool has a detrimental impact on Sharia-compliant investors, or if they can expect similar returns as conventional investors.

To do so, we will present the different Sharia-compliant investment vehicles and we will analyze the risk and return characteristics of the two main categories:

- Fixed income
- Equities

We will start by presenting the two types of investment categories. Then we will analyze their risk and return characteristics using mathematical equations.

2. Sharia investment vehicles

2.1 Sukuk

Because Sharia law does not permit usury, Islamic investors are unable to access a very big part of the capital markets: conventional fixed income instruments. In traditional finance, fixed income is a staple of all client portfolios. For many years, Islamic investors could not invest in these lower risk assets in a Sharia-compliant manner. However, over the past sixteen years, a similar instrument has gained steam; that instrument is Sukuk. Sukuk is the Arabic word for certificates.

It is often considered that Sukuk are the Sharia-compliant equivalent of conventional bonds. Though Sukuk are the closest financial instrument Islamic investors have to traditional interest bearing bonds, they are in fact structured very differently. The most important aspect of Sukuk is their risk and profit sharing structures, which are a staple of Islamic Finance

Sukuk gives its holder the ownership of a securitized set of assets through various forms of Sharia-compliant contracts. Securitization is a process "which involves moving assets into a special legal entity. This special legal entity then uses the assets as guarantees to back (secure) a bond issue, leading to the creation of securitized bonds." (Choudhry, Wilcox, 2013: 297).

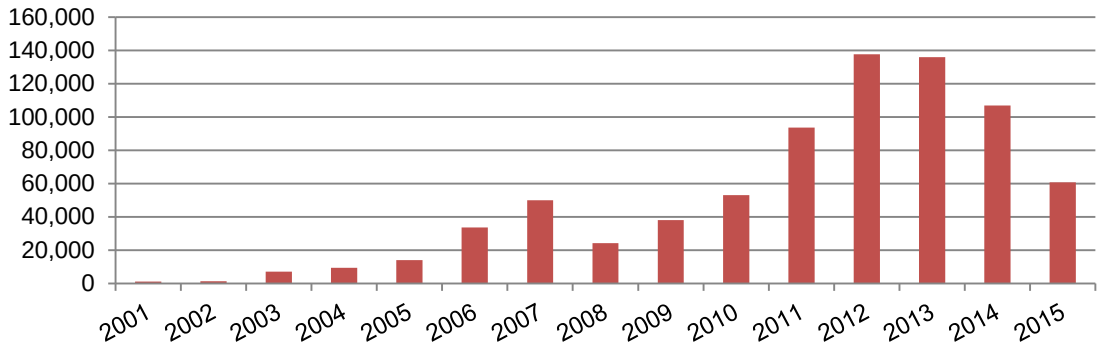
An interesting definition of Sukuk securitization is:

> *"Sukuk are securitizations of either assets (and their cash flows) or entire businesses (and their cash flows). They are not bonds. Each asset originator has a definable cost of obtaining funds from direct funding sources (i.e., the interest rate it must pay). The principle and purpose of asset securitization is to isolate certain of the originator's assets to allow an investor in those assets to provide lower-cost funding than the originator's direct funding cost absent such an isolation (taking into account transaction costs)." (McMILLEN, 2013:184)*

2.1.1 Sukuk market

Since the early 2000's, the issuance of Sukuk has increased substantially. According to the Sukuk Report 5th edition released in March 2016 by the International Islamic Financial Market (IIFM), there has been a total of about USD 767 billion worth of Sukuk issued between January 2001 and December 2015. In figure 1 below, we have a graphical representation of the amount issued per year.

Figure 1 - Sukuk Issuances January 2001 to December 2015 in USD Millions



Source: adapted from IIFM, 2016

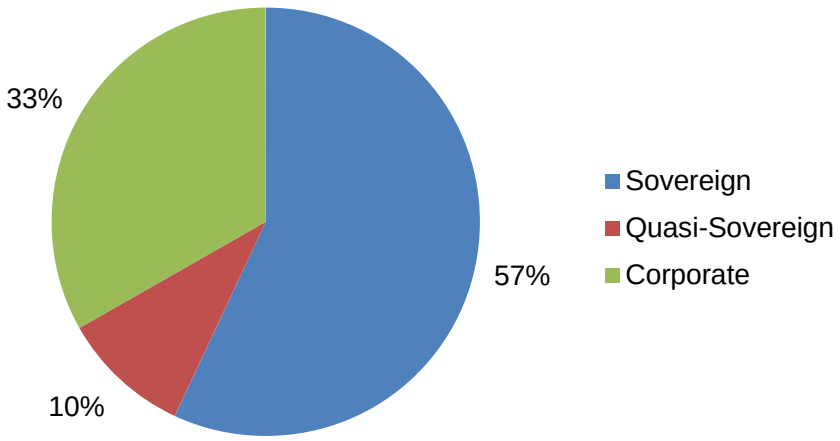
We can clearly observe a high uptake in Sukuk issuance over the years. However in 2015, we could witness a drop of about 43% in new issuance:

> *"A large part of this decline is due to BNM[1] policy decision to discontinue issuance of short-term investment Sukuk and this may not be taken as a reflection of weakness in the Sukuk market but a change of strategy" (IIFM, 2016: 5).*

There are three types of entities that issue Sukuk securities:

- Sovereign: Sukuk issued by a national government
- Quasi-Sovereign: Sukuk issued by a public sector entity often sponsored or owned by a national government
- Corporate: Sukuk issued by a private corporation

Figure 2 - Sukuk Issuance by Issuer Type



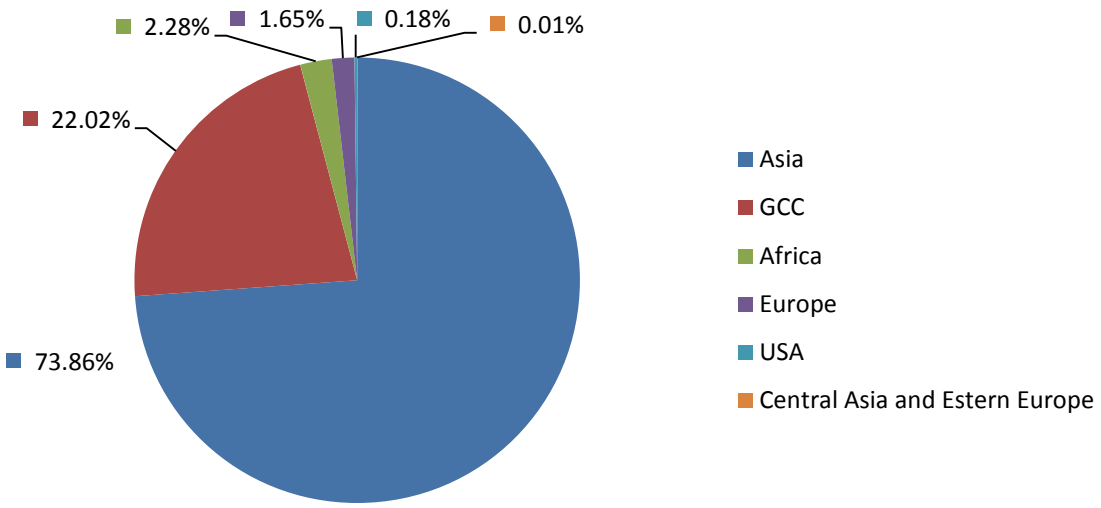
Source: adapted from IIFM, 2016

[1] Bank Negara Malaysia (BNM) is the central bank of Malaysia

In figure 2 above, we have the percentage of Sukuk issued by each type of entity between January 2001 and December 2015. Sovereign entities have issued USD 437 billion worth of Sukuk, equivalent to 57% of total issues. A high percentage of the Sukuk issued by Sovereign entities are short-term (under 12 months) certificates.

A concern with Sukuk securities is the lack of regional diversification. As we can view in figure 3 below, over 95% of all Sukuk issues since 2001 are from the Middle East and Asia, with 57% coming from Malaysia and a further 22.02% coming from the Gulf Cooperation Council (GCC)[2] region. Looking a little closer, we can observe that only 2% of all Sukuk are from developed regions (USA and Europe).

Figure 3 - Global Sukuk Issuance Regional Break-Up



Source: adapted from IIFM, 2016

It should be noted that even though most Sukuk are issued in developing regions, a considerable amount of them are considered Investment Grade[3], meaning that the top rating agencies provide them with a rating BBB- or above .

Following our brief analysis of the Sukuk market, we would like to present some of the different types of Sukuk encountered on the market. Before investing in Sukuk, it is important to understand the way they are structured. There are several different types

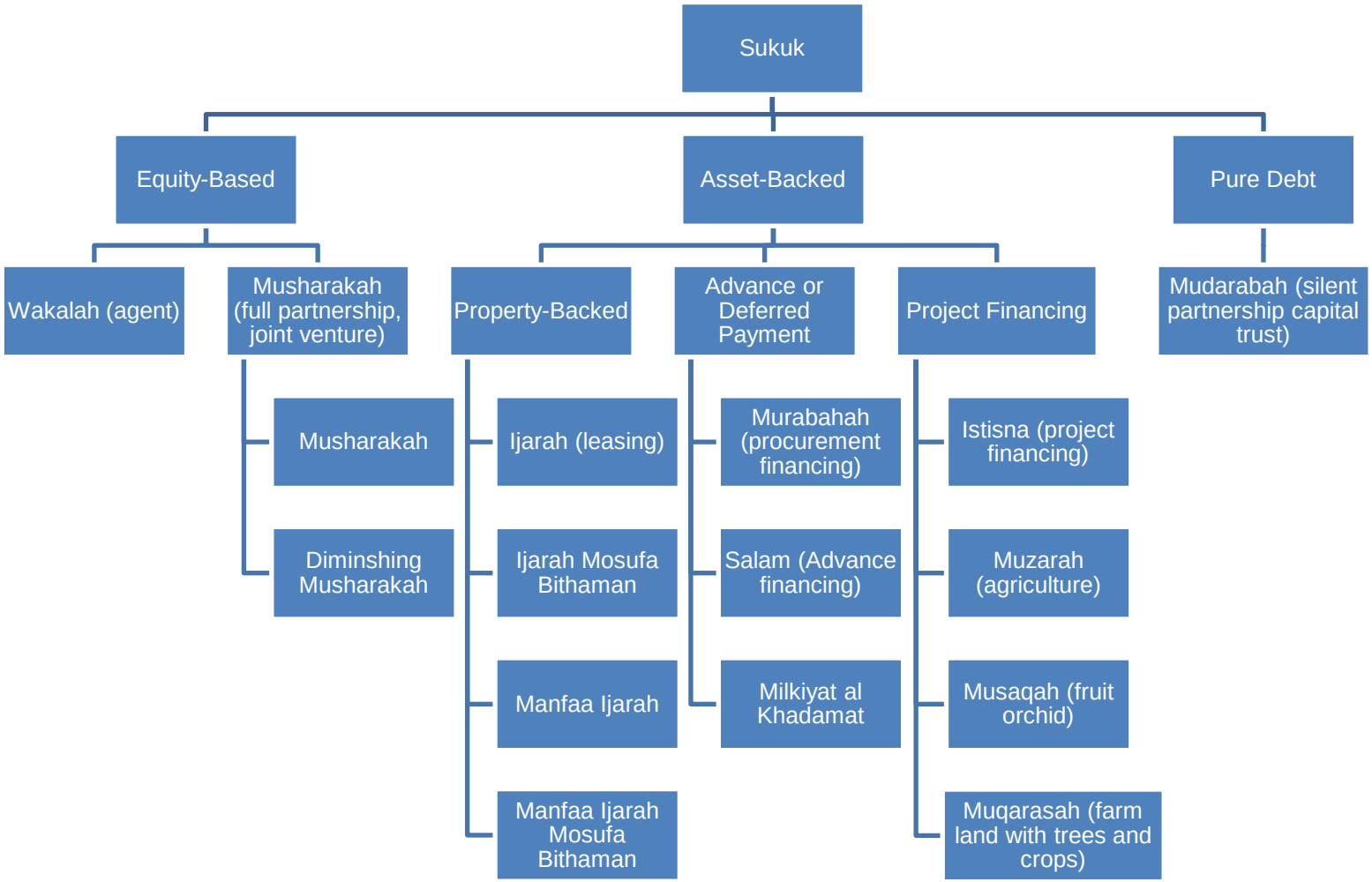
2 Gulf Cooperation Council (GCC) is a "political and economic alliance of six Middle Eastern countries: Saudi Arabia, Kuwait, the United Arab Emirates, Qatar, Bahrain and Oman" (Britannica 2016)

3 Investment Grade fixed income is debt with a high credit rating, meaning that the risk of non-payment is low. Any debt with a rating under BBB- is called non-investment grade or Junk Bonds, meaning that the investment is highly risky.

of existing Sukuk, with several proposed classifications. One proposal is to classify Sukuk contracts based on their financial characteristics as depicted in figure 4 (Ariff, Mohamed, Safari 2014: 26).

In figure 4 below, we could observe that there are many different types of Sukuk contracts. Each one has its own particular structure and financing objective, however, not all the mentioned contracts are frequently used in tradable Sukuk form.

Figure 4 - Classification of Sukuk Contracts



Source: Ariff, Mohamed, Safari 2014: 27

For all Sukuk securities, a Special Purpose Vehicle (SPV) is created by an investment bank for the purpose of asset securitization. An SPV is an independent legal entity that issues ownership certificates (Sukuk) to the investors to which the entity issuing the Sukuk has to relinquish ownership of an income-generating asset as a guarantee for the loan. The asset-backing nature of Sukuk securities does not permit companies to leverage their balance sheet through debt contracting; because if the company doesn't have enough assets to collateralize, it can't take on more debt.

Table 1 - Sukuk Issuance Type by Issuer Type in USD Millions from January 2001 to December 2015

Types of Sukuk	Corporate		Quasi-Sovereign		Sovereign	
Musharakah	58'267	23%	17'461	23%	16'514	4%
Murabahah	58'218	23%	14'787	20%	287'154	66%
Ijarah	54'350	21%	10'796	14%	88'344	20%
Hybrid Sukuk	30'449	12%	1'574	2%	4'538	1%
Wakalah	16'946	7%	27'104	36%	6'324	1%
Mudharabah	16'296	6%	117	0%	4'519	1%
Bai'Bithaman Ajil	12'632	5%	21	0%	22'122	5%
Islamic Exchangeable	4'448	2%	3'132	4%	0	0%
Al Istisna	3'469	1%	0	0%	19	0%
Salam	1	0%	0	0%	7'496	2%
Total	255'076	**100%**	74'992	**100%**	437'030	**100%**

Source: adapted from IIFM, 2016

In table 1 above, we can observe the different types of Sukuk issues by issuer type. The most popular forms of Sukuk are:

- Murabahah – 47% of total issues
- Ijarah – 20% of total issues
- Musharakah – 12% of total issues

We will highlight the main characteristics of the above three types of Sukuk in the following sub-sections.

2.1.2 Sukuk Murabahah (debt)

A Murabahah contract can be viewed as a sales contract where a financial institution "*buys a good or asset and sells it to the client at a mark-up. The client pays for the good or asset at a future date or in installments." (ASHRAF, HASSAN, 2013: 234)*

Murabahah contracts are often used in Islamic banking for trade finance. It replaces the traditional model where a bank would lend money to a client with an interest rate.

However, the mark-up used by financial institutions for these types of contracts are often pegged to conventional interest rates.

Even though the aforementioned practice could be viewed as non-Sharia-compliant, Islamic banks are often forced to do so due to the concept of supply and demand. If the lender provides mark-ups lower than the interest rates, the demand for the Murabahah contracts would rise allowing the lender to raise the mark-up. However, if the mark-up is higher than the interest rates, clients will avoid Murabahah contracts and they will use conventional financing techniques.

Murabahah contract are often short-term and used for liquidity management similar to a fiduciary deposit[4] in conventional banking.

As for Murabahah Sukuk, a useful definition is:

> *"With a Murabahah Sukuk, an Islamic bank securitizes its trading transactions with a proportion of the fixed markup providing the return to the Sukuk investor, and the bank uses the repayment from its trading client to repay the Sukuk holder on termination of the contract."* *(Ariff, Mohamed, Safari 2014: 63)*

2.1.3 Sukuk Ijarah (Lease contract)

Ijarah, from the Arabic meaning "to rent something", is a frequently used form of financing in Islamic banking. In many ways an Ijarah contract is very similar to a lease contract. The lessor would buy or provide an asset to the lessee in exchange for a rental fee.

There are two types of Ijarah contracts. In the traditional Ijarah contract, the lessee has the right to use the leased item while paying rent for the right to use it. The second form is the Ijarah Wa Iqtina, meaning to lease and to own. In its second form, the lessor and lessee enter in a second contract in which the lessee agrees to buy the asset following the maturity of the Ijarah contract.

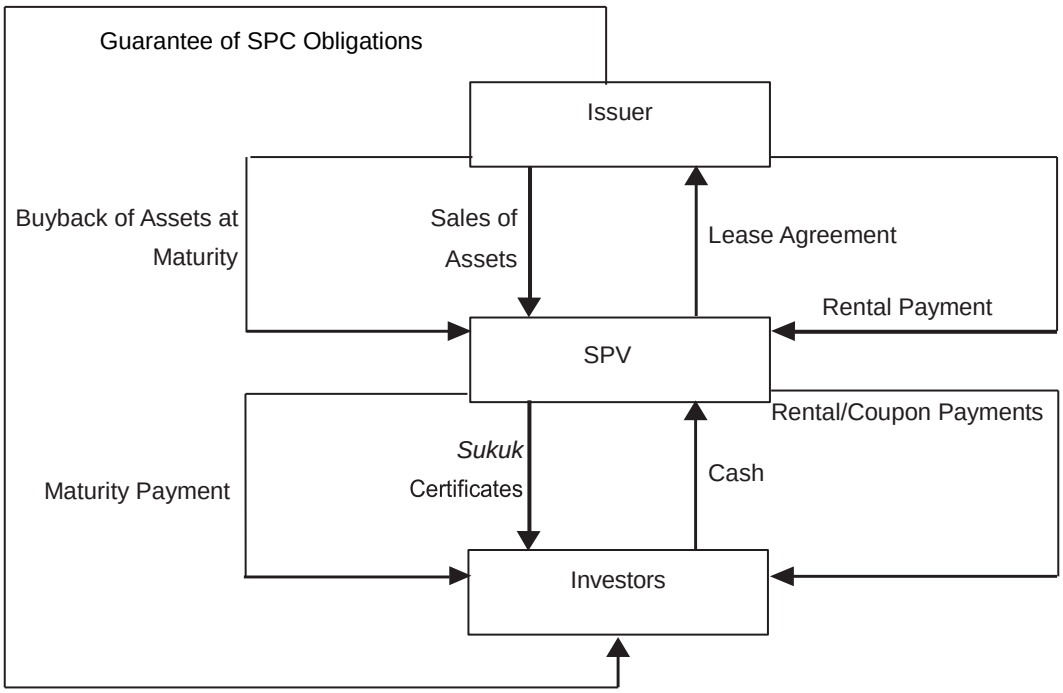
> *"Ijarah wa iqtina is popularly practiced when an Islamic bank purchases equipment or some other capital asset based on the request of a customer and then rents it to the customer for a fixed amount. The customer promises to purchase the equipment or asset within a specified period, and ownership is transferred from the bank to the customer. The lease contract is completely separate and independent from the contract of purchase of residuals, which must be valued on a market basis and cannot be fixed in advance."*
>
> *(Ariff, Mohamed, Safari 2014: 65)*

[4] A fiduciary deposit is a short term contract in which a bank would invest cash in another bank in exchange for an interest rate. Often used for excess liquidity.

An important point pertaining to the Ijarah contract is the ownership of the leased asset. Under said contract, the ownership and liability for the asset remains with the lessor. Only possession is transferred meaning the risk remains with the lessor.

As for Ijarah Sukuk, the issuer would sell an asset to the SPV which will lease the asset back to the issuer in exchange to a prefixed or benchmarked rental. SPV in turn would issue Sukuk certificates to investors through securitization of the underlying contract. In figure 5 below we have a simple example of an Ijarah Sukuk structure.

Figure 5 - Ijarah Sukuk Structure



Source: Ariff, Mohamed, Safari 2014: 66

2.1.4 Sukuk Musharakah (Profit Sharing)

The final Sukuk we would like to present is the Musharakah Sukuk. A Musharakah, from the Arabic word for “partnership”, can be viewed as a joint venture between two parties. Each party would provide either capital or management, or some of each, to the joint venture. A Musharakah is entered to finance a specific project. In a Musharakah, all profit and loss are shared between the two contracting parties. The profit is shared following a pre-negotiated payoff ratio, whereas the losses are absorbed by both parties in proportion to their capital invested in the project.

Some types of Musharakah, called diminishing Musharakah, also provide a share buy-back feature for the issuer. In other words, the issuer would buy back the investors’ share of the joint venture in installments.

A Musharakah Sukuk, as with the previous mentioned examples, is the process of securitizing one or several Musharakah contracts and issuing Sukuk securities to investors. A Musharakah Sukuk is very different than any conventional bond as the cash-flows generated are neither fixed nor are they pegged to a benchmark. The cash-flows depend on the project in the underlying Musharakah contract or contracts.

2.1.5 Challenges

There are three major challenges that currently exist for the Sukuk market. First of all, we are presented with an issue of liquidity. “Liquidity describes the degree to which an asset or security can be quickly bought or sold in the market without affecting the asset's price” (Investopedia, 2016a). Illiquidity is a major problem for most Sukuk markets. As of 2011, the majority of Sukuk markets suffered from illiquidity to the extent that 70% or more of all Sukuk never exchanged ownership (Ariff, Mohamed, Safari 2014: 190). A lack of liquidity leads to market inefficiency. Currently, the demand for Sukuk is higher than the supply.

The second challenge we have with Sukuk is their valuation. Today, most professionals value Sukuk the same way they would value conventional bonds. While this may work for some Ijarah Sukuk, where the issuer pays regular loan repayments, this doesn’t work for most other types of Sukuk, where the payoff is not necessarily regular. This issue is further emphasized by the lack of liquidity, because if there are a limited number of sellers on the market, the rare seller could demand a higher price than the valuation would demand.

The final challenge faced by potential investors is the higher costs associated with issuing and trading Sukuk. Due to the complex structure of Sukuk, the legal and set-up fees are higher than a conventional fixed income issuance. The higher cost is indicative of the lack of standardization in the issuing process.

These three challenges are due to the rather young nature of Sukuk. As more entities become comfortable with the process of issuing a Sukuk, we could expect to witness an uptake in issuance. If Sukuk gain liquidity, the markets will have to further extend its understanding of the products and we could expect to find more sophisticated valuation theories to gain further market efficiency.

2.2 Equities

The Sharia-compliant equities universe is very vast. Unlike fixed income, conventional equity can be considered Sharia if it passes a screening process. There are two types of screening that are commonly done, one qualitative and the other quantitative.

The qualitative screening serves to exclude companies that are active in industries that are considered to be prohibited by Sharia. Some of these industries include the production and distribution of tobacco, alcohol, gambling, pork products and conventional interest based financial and insurance institutions.

The quantitative screening, often called financial screening, assists in the exclusion of companies that have a debt heavy capital structure; meaning that an unacceptable portion of their income is generated from debt. It also excludes companies with too much income being generated from interest-bearing instruments. An example of financial screening is the following:

- *Total debt divided by trailing 24-month average market capitalization*
- *The sum of a company's cash and interest-bearing securities divided by trailing 24-month average market capitalization*
- *Accounts receivables divided by trailing 24-month average market capitalization"*

(Dow Jones, 2016)

A Sharia Board is used to supervise the implementation of all screening process. They are also consulted if any issue arises from the screening process or when there is doubt as to the compliance of a specific company. Some Sharia Boards have different opinions on the screening process. One Board could deem a company not Sharia-compliant, whereas another board could have the opposite opinion.

3. Risk and returns measures

In Islamic finance and traditional finance alike, there are many different mathematical formulas and ratios used to calculate risk and returns for assets. We focused our research on the following measures:

- Performance
- Volatility
- Consistency of performance
- Maximum drawdown and time to recovery
- Sharp ratio

3.1 Performance measures

Many people focus on performance measures when analyzing potential investments. The performance of an investment can be considered as the return earned on an asset during a given period. To calculate the performance, we concentrated on the concept of true daily time weighted returns. “The time-weighted rate of return measures the compound rate of growth of $1 initially invested in the portfolio over a stated measurement period” (DeFusco, 2004: 341).

To calculate the time-weighted rate of return, we first have to calculate the daily return. Daily performance is calculated by dividing today’s closing price by yesterday’s closing price and subtract the result by one, as presented in the below equation:

$$R_t = \left(\frac{P_t}{P_{t-1}}\right) - 1 \qquad (1)$$

Where:

- R_t = return for period t
- P_t = closing price for time t
- P_{t-1} = closing price for time t -1 period
- t = period

When calculating daily returns, “*t*” would equal to one day

3.1.1 Absolute return

Absolute return is the return an investment has during a given period of time. The time period could be one month, or ten years.

To measure the absolute return of an investment using daily closing prices, we have to geometrically chain the daily returns using the following equation:

$$R_T = \left[\prod_{t=1}^{T}(1 + R_t)\right] - 1 \quad (2)$$

Where:

- R_T = return for period T
- R_t = return for period t
- t = period
- T = total number of periods

The above equation provides us with a percentage return for the total period defined under *T*. We use daily returns in the above equation as it provides a more accurate performance calculation. It is often used by finance professionals to calculate performance because it takes into account the compounding effect of returns.

3.1.2 Annualized return

Annualized return provides a per year return. It transforms an absolute return into a per year return while taking into consideration the compounding effect of the investments. Absolute return considers the length of the investment as one period; whereas the annualized return transforms the length of the investment into yearly tranches.

To annualize the return, we use the following equation:

$$R_A = (1 + R_T)^{n/T} - 1 \quad (3)$$

Where:

- R_A = annualized return
- R_T = return for period T
- *n* = number of periods in a year
- *T* = total number of period

For our study, we consider "*n*" to be the number of trading days in a year, which is between 260 and 262 days.

3.2 Risk measures

Even though measuring returns is very important in any performance study, it is very important to take into consideration the level of risk an investor is taking to earn a certain amount of return. As with measuring returns, there are many different

mathematical approaches to calculate risk. Some are more complex than others. In this study, we have decided to concentrate on the measures frequently used throughout the industry.

3.2.1 Annualized volatility

Volatility is "the standard deviation of the continuously compounded returns on the underlying asset" (Institute, 2014). Volatility is considered as the risk linked to a price movement. It is calculated as followed:

$$\sigma_A = \sqrt{\frac{\sum_{t=1}^{T}(R_t - \bar{R})^2}{T} \times n} \quad (4)$$

Where:

- σ_A = annualized volatility
- R_t = return for period t
- n = number of periods in a year
- T = total number of period

As it can be seen in the above equation, volatility provides an insight on how far our returns can vary from the arithmetic mean of returns for a given period. High volatility means that an assets price can vary significantly. Low volatility means that there is very little price movement during a period.

Although volatility is often associated with how much money one can lose in a given time period, it should be noted that it also provides an insight on how much we can hope to earn. Volatility measures both upside and downside risk.

3.2.2 Consistency of performance

Although volatility is an interesting measure of risk, it is not enough by itself. It is important to take into account other factors that may not be visible when calculating the volatility. We decided to analyze how many months had a positive return over a given period. When we compare the percentage of positive months with the absolute return and with the volatility, we can see if the analyzed investment has one of the three below profiles:

- many small negative returns and a few very positive returns
- even amounts of negative and positive returns
- many small positive returns and a few very negative returns.

3.2.3 Maximum drawdown and time to recovery

Drawdown is the amount of loss incurred from the highest value and the subsequent lowest value of an investment during a defined period.

$$DD = \frac{Bottom}{Peak} - 1 \quad (5)$$

Where:

- *DD* = drawdown
- *Peak* = highest point during the given period
- *Bottom* = lowest point following the peak during the given period

Maximum drawdown is the biggest Peak to Bottom loss incurred during a given period. It is a downside risk measure that provides some insight into how much an investor can expect to losing during any given time.

Even though maximum drawdown is a very interesting ratio, by itself it does not provide enough information. The time to recovery should also be taken into consideration. Time to recover is the amount of days, months or years it takes an investment to recover from its drawdown and get back to its Peak value.

3.2.4 Sharpe ratio

One relative performance measure widely used is the Sharpe ratio (Sharpe, 1966). The Sharpe ratio is the relative return of an asset divided by its standard deviation. The relative return is calculated by subtracting the risk-free rate of return from the portfolio return:

$$Sharpe\ Ratio = \frac{R_p - R_{rf}}{\sigma_p} \quad (6)$$

Where:

- R_p = portfolio's return
- R_{rf} = risk-free rate of return
- σ_p = portfolio's standard deviation

The risk-free rate is the rate of return one can expect to receive from a non-risky asset. In most cases, one month or three month United States Treasury Bills or London Interbank Offered Rate (LIBOR) is used as the risk-free rate.

The Sharpe ratio indicates the amount of risk taken to provide one unit of relative return.

4. Analysis of Sharia-Compliant Investments

To test the potential of Sharia-compliant investments, we elected to analyze the market as a whole. As explained previously, we were able to find equivalent instruments to most traditional investments.

Table 2 - Conventional and Sharia-Compliant Asset Allocation

Conventional	Sharia-Compliant
Cash & Cash equivalent	Murabahah account
Fixed Income	Sukuk
Equities	Equities
Alternative investment	Alternative investment

Source: original content

The above table indicates the different investment categories used in conventional portfolio management and their Sharia-compliant equivalent.

As we wanted to quantify the potential of being Sharia-compliant for a typical investor, we looked into the performance and associated risks of equity and fixed income markets. As with most cases in finance, studying the risk and return profiles of an investment does not provide sufficient information; for that reason, we compared Sharia-compliant indices with conventional indices of similar construction as most people are familiar with the latter.

4.1 Index Selection

Indices are simulated portfolios of securities used to represent a market or a small segment of a market. There are many different indices with various construction methodologies. To analyze the equities market, we have decided to concentrate on three regions:

- Global
- United States of America
- Europe

We have chosen the above three regions as they cover the markets individual investors are most likely to enter. The Global index provides analyzable data on the equities market as a whole, whereas the United States of America and Europe include the most traded securities.

We have chosen the most used indices in the world. They are the premiere benchmarks per region.

Table 3 – Equity Index Characteristics

Index	Sharia	Region	Constituents	Weighting	Review	Dividend treatment
DJIM	Yes	Global	2'593[5]	Float-adjusted market cap	Quarterly	Price return
MSCIW	No	Global	2'481[5]	Float-adjusted market cap	Quarterly	Price return
IMUS	Yes	US	521[5]	Float-adjusted market cap	Quarterly	Price return
SPX	No	US	500	Float-adjusted market cap	Quarterly	Price return
DJIEU	Yes	EU	318[5]	Float-adjusted market cap	Quarterly	Price return
E1DOW	No	EU	887[5]	Float-adjusted market cap	Quarterly	Price return

Source: adapted from June 2016 factsheets

The above table lists the various indices we have selected for our analysis. We have taken two indices per region, one sharia-compliant and one conventional. The indices selected all use a float-adjusted market capitalization weighting of their constituents. We have selected to use price return instead of total return strategies. Selecting indices with the same weighting methodology and dividend treatment was very important for comparability.

For the fixed income securities, we focused our efforts on two global indices, one Sharia-compliant and one conventional.

Table 4 - Fixed Income Index Characteristics

Index	Sharia	Region	Constituents	Weighting	Review	Dividend treatment
DJSUKUK	YES	Global	71	Market Value	Monthly	Total return
LBUSTRUU	No	Global	9'977	Market Value	Monthly	Total return

Source: adapted from July 2016 factsheets

Total return indices use income generated by the underlying securities, such as interest payments, to reinvest in the same index. We believe it is important to analyze fixed income indices on a total return basis as the interest payments are an integral part of the investment instrument.

5 Number of constituents according to June 2016 Factsheets. Constituents' number can vary following a quarterly review.

4.2 Data collection and processing

After selecting the various indices we wanted to include in our study, we started gathering the required data. The first step was to extract the historic prices from a Bloomberg Terminal. The terminal provides a variety of financial data. An Excel plug-in was used to extract closing prices for the indices we were analyzing.

For the equities portion, we decided to start our analysis as of January 1st 2003. Data was available for earlier periods, but we decided to start our analysis following the Dot Com bubble of 2000. Following the bubble, the markets crashed in early 2000 and bottomed out between late 2002 and early 2003.

We wanted to use data that had the recovery following the crash as a starting point. We would be able to see how each index recovered, and how it reacted during the financial crisis that followed the Subprime bubble of 2007 and the recovery that followed.

As for the fixed income indices, we used January 1st 2006 for the start of our analysis window. The first value available for the DJSUKUK index was September 30th 2005. To facilitate our performance and risk analysis, we decided to use the beginning of the year as our starting point.

For both the equities and fixed income indices, we used June 30th 2016 as our end date. We used the latest end-of-quarter date available.

When the closing prices for the various indices were collected, we processed the data to make it comparable. Not all indices had the same amount of trading sessions per year due to their regional coverage. For example, DJIM had about 313 trading sessions per year because it traded six days a week over the whole year. We decided to remove all trading days where only one of the six equity indices traded.

To be able to visually compare the different indices more efficiently, we decided to use a base price of USD 100 as of January 1st 2003. To do so, we calculated the daily returns using equation (1). Using the daily returns, we were able to calculate each day's index level while starting at 100.

4.3 Global equities

It was important to start our analysis on a global scale. The two indices, Dow Jones Islamic Market World index (DJIM) and MSCI All Country World index (MSCIW), we selected would allow us to compare the risk and return profiles of Sharia-compliant and conventional global markets. Following our analysis, we can concentrate on the other two regions to verify our findings.

4.3.1 DJIM: Dow Jones Islamic Market World Index

DJIM is widely used by investment professionals as a benchmark for Sharia-compliant world equities. Dow Jones uses several variables to screen for Sharia-compliant stocks. Below is a list of the main filters used to screen for sharia-compliance, as stated on Dow Jones' website:

"Industry Screens:

- *Alcohol*
- *Pork-related products*
- *Conventional financial services*
- *Entertainment*
- *Tobacco*
- *Weapons and defense*

Financial Ratio Screens:

All of the following must be less than 33%:

- *Total debt divided by trailing 24-month average market capitalization*
- *The sum of a company's cash and interest-bearing securities divided by trailing 24-month average market capitalization*
- *Accounts receivables divided by trailing 24-month average market capitalization"*

(Dow Jones, 2016)

Dow Jones employs four prominent Islamic scholars on its Sharia Board for advice on the screening process.

4.3.2 MSCIW: MSCI All Country World Index

MSCIW is often used as a benchmark for world equities market; therefore it was the logical index to use. The index has 2'381 constituents from twenty-three developed and twenty-three developing markets; it covers approximately 85% of the global investable equity opportunity set (MSCI ACWI USD Factsheet, June 2016).

4.3.3 Index composition

Both Indices try to provide information on the global market, but due to the Sharia screening done for the DJIM index, we are presented with different country and sector weighting in each index. Below we have a table with the five biggest contributors by country for each index:

Table 5 - Global Equities Country Allocation

Country	DJIM	Country	MSCIW
United States	60.95%	**United States**	53.57%
Japan	6.76%	**Japan**	7.63%
Switzerland	5.11%	**United Kingdom**	6.42%
United Kingdom	4.48%	**Canada**	3.17%
China	2.63%	**France**	3.15%
Other	20.07%	**Other**	26.06%

Source: adapted from June 2016 factsheets

As we can see in the above table, the country distribution is a little different in each index. Firstly, the top five country contributors are not the same in each index. For example, Canada has the fourth highest weighting of 3.17% in the MSCIW index, but it is only eight with 2.20% in the DJIM index.

The differences in the index construction are even more visible in the sector weighting.

Table 6 - Global Equities Sector Allocation

Sector	DJIM	MSCIW
Technology	21.79%	14.88%
Health Care	19.83%	12.21%
Consumer Goods & Services	26.29%	23.25%
Industrials	14.12%	10.38%
Oil & Gas	6.91%	7.02%
Basic Materials	6.21%	4.90%
Financials	2.79%	19.70%
Telecommunications	1.65%	4.03%
Utilities	0.41%	3.63%

Source: adapted from June 2016 factsheets

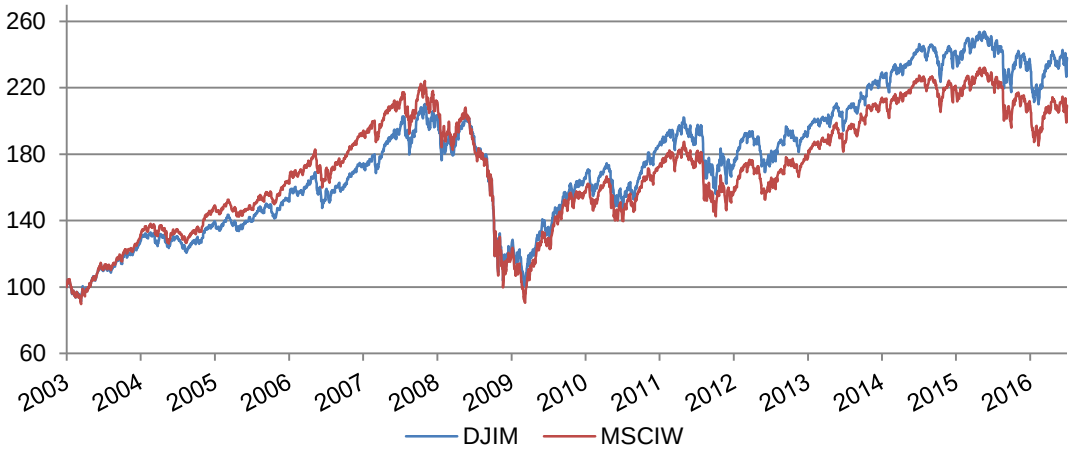
The biggest difference in the sector distribution can be found under Financials. The industry is under represented in the Sharia-compliant index due to the screening process eliminating all conventional financial institutions due to their non-Sharia-compliant business models.

There are only a few industry sectors that have similar weighting in the indices. If we were to assume that the only difference we have between the two indices is linked to the sector breakdown, then they would share about 77% of the same stocks. However, we can't make such an assumption as there are other factors that influence each index constructions. But it does demonstrate that both indices have different constituents.

4.3.4 Risk and return profiles

Below we can find a graph of the price evolution of both indices through our analysis window of thirteen and a half years. As mentioned in our data collection and processing, we used a base currency of USD 100 as of January 1st 2003.

Figure 6 - Global Equities Historic Price



Source: adapted from Bloomberg data

We can make several interesting observations from the graphic representation in figure 6. We can observe that both indices are highly correlated over the thirteen and a half window. It is visible that MSCIW had a better recovery period between 2003 and end of 2007. However, DJIM had a better recovery period from 2009. These observations are supported by our index characteristics analysis done earlier. DJIM has a higher weighting in the Technology sector, which explains the tougher recovery period following the Dot Com crash. Moreover, DJIM has a very low weighting in Financials, which explains the better recovery following the financial crisis. Furthermore, the

screening for companies with high debt in their capital structure favored the conventional index before the 2007-2008 market crash.

4.3.4.1 Annualized returns

We started our analysis by taking a closer look at the return profile of both indices.

Table 7 - Global Equities Annualized Returns

	DJIM	MSCIW	Δ Returns
1 year	-2.11%	-5.72%	3.61%
3 year	6.21%	3.92%	2.30%
5 year	4.21%	3.16%	1.05%
10 year	4.20%	2.08%	2.12%
01.2003 to 01.2008	15.09%	16.14%	-1.05%
Total	6.63%	5.62%	1.01%

Source: adapted from Bloomberg data

In table 7, we have calculated the annualized returns of six time horizons. We used equation (2) to calculate the absolute return over the given time horizons. We then used equation (3) to annualize the returns. Annualized returns should be understood as the average return you would get per year over a given amount of years. For example, for DJIM, if you invested money into DJIM three years ago, then you would have earned an average of 6.21% per year. Using annualized returns allows us to better compare figures as they are displayed as per year returns.

We also added a column with the difference in returns between DJIM and MSCIW. We can clearly see that DJIM had a better return than MSCIW over our sampled period. Only in the five years between January 2003 and end of December 2007 does MSCI have a better return.

4.3.4.2 Annualized volatility

To be able to put the returns demonstrated in table 7 into perspective, we created the below table with the annualized volatility with the same time horizons.

Table 8 - Global Equities Annualized Volatility

	DJIM	MSCIW
1 year	15.14%	15.69%
3 year	11.62%	11.79%
5 year	14.01%	14.09%
10 year	17.50%	18.82%
01.2003 to 01.2008	11.42%	11.13%
Total	16.11%	16.33%

Source: adapted from Bloomberg data

To calculate the annualized volatility per index, we started with the daily returns already calculated. Then we used equation (4) to calculate the annualized volatility per period. We can observe that both indices have a very similar risk profile. These figures are in line with the results we expected.

4.3.4.3 Sharpe ratio

As mentioned before, volatility is associated with the amount of risk taken, but it can also be beneficial. We calculate the Sharpe ratio to know how much risk we are taking per unit of relative return.

We explained that the risk free rate is an important part of the Sharpe ratio. However there are several different rates that can be used and they can change daily. Since we wanted to calculate the Sharpe ratio to compare the risk-return profile of a Sharia-compliant index with a conventional index, we decided to use a risk free rate of 0. Both indices will be using the same rate, so using an assumption where the risk free rate would be 0 will not have any significant impact on our analysis.

Table 9 - Global Equities Sharpe Ratio

	DJIM	MSCIW
1 year	-0.14	-0.36
3 year	1.71	1.04
5 year	0.30	0.22
10 year	0.24	0.11
01.2003 to 01.2008	1.32	1.45
Total	0.41	0.34

Source: adapted from Bloomberg data

Equation (6) was used to calculate the Sharpe ratios in table 9 using annualized daily returns over each time horizon. As explained above, in our calculations, we assumed that R_{rf} was equal to zero.

Even though the volatility indicated in table 8 is very similar for both indices, DJIM has more favorable risk to return ratios. According to the Sharpe ratio, DJIM has had better returns while taking on the similar amounts of risk.

4.3.4.4 Maximum drawdown and days to recovery

In addition to calculating the risk-reward profiles above, we also took a look at the downside risks for each of the two indices. To do so, we calculated the maximum drawdown for each index, and the trading days to recover all the losses.

Table 10 - Global Equities Maximum Drawdown and Days to Recovery

	DJIM	Dates	MSCIW	Dates
Peak	205.74	19/5/2008	208.11	19/5/2008
Bottom	100.13	9/3/2009	90.51	9/3/2009
MDD	-51.33%		-56.51%	
Trading Days to Recovery	1'085	3/5/2013	1'207	22/10/2013

Source: adapted from Bloomberg data

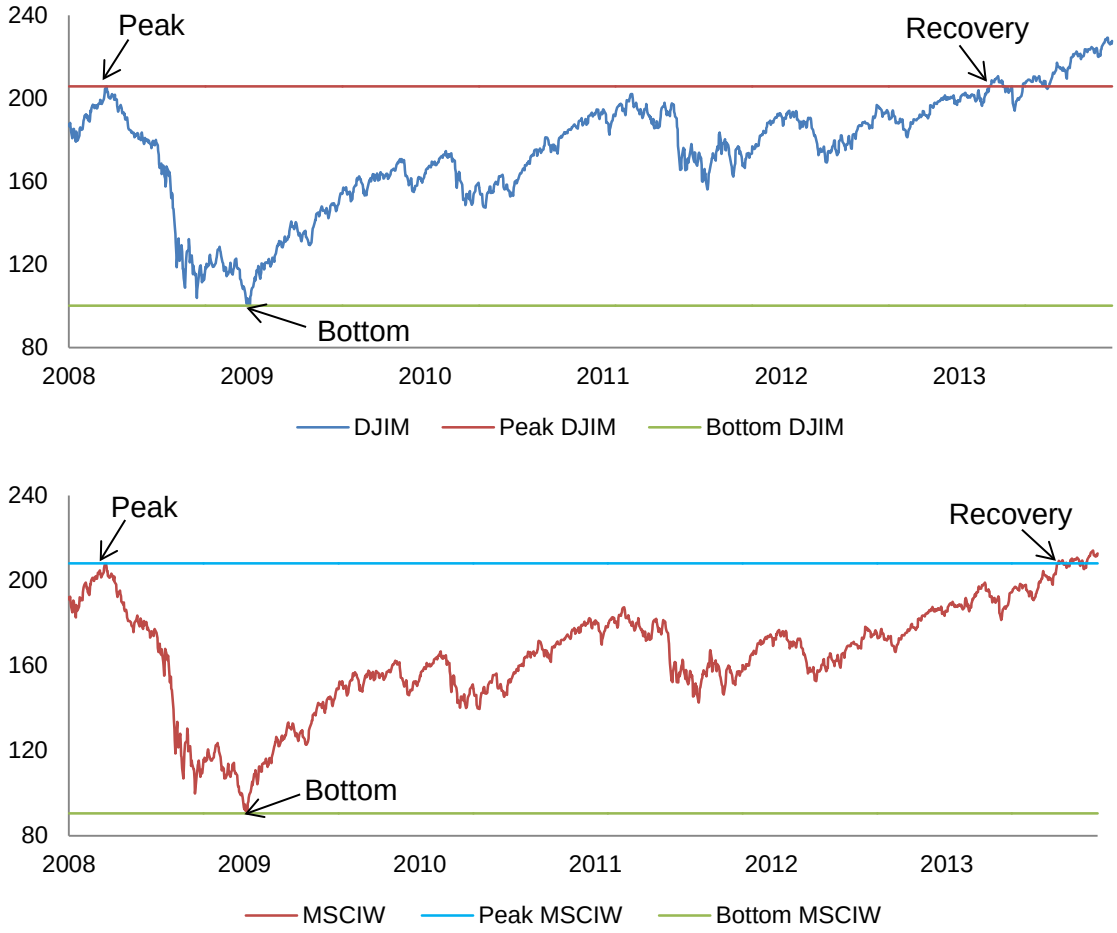
To calculate the above maximum drawdown figures, we started with calculating a rolling drawdown with a one year window. Our first drawdown window started from January 1st 2003 until December 31st 2003. For each window, we used the last day's closing price as the *Bottom* value in equation (5). As for the Peak Value, we used the "*max*" function present in Microsoft Excel to provide us with the maximum index value during the one year window. In the case where the maximum value during the window is the value used for the *Bottom*, then the drawdown would equal to 0.

The method discussed above is not the correct way to calculate the drawdown over a given time horizon, as we always use the last day of the drawdown window as the *Bottom* value, but because we calculate the drawdown for each day between December 31st 2003 and June 30th 2016, we are sure to include all possible drawdown figures with a one year window.

After calculating the rolling drawdown, we used the "*min*" function in Microsoft Excel to find the maximum drawdown of our analysis window. Unsurprisingly, both indices' maximum drawdown occurred during the recession that followed the Subprime bubble. However, we were a little surprised to see that the *Peak* dates and the *Bottom* dates for

both indices are exactly the same. This provides further evidence of some correlation between both indices.

Figure 7 - Global Equities Maximum Drawdown and Time to Recovery



Source: adapted from Bloomberg data

In table 10 and in figure 7 we can clearly see that the *Peak* and *Bottom* dates coincide perfectly. However, two differences exist, the percentage of loss and the days to recovery. For the former, MSCIW had a visibly higher loss rate than DJIM. As for the latter, DJIM recovered all of the losses following its maximum drawdown on May 3rd 2013, whereas MSCIW's recovery took until October 22nd 2013. MSCIW need 122 more trading days to recover from its losses. These two observations demonstrate that MSCIW has a higher down side risk, while taking a longer to recover from the losses.

The lower maximum drawdown observed for the Sharia-compliant index can be explained by the Sharia screening done. Firstly, DJIM has little exposure in the Financials sector, which performed very poorly in 2008. Secondly, the screening done for highly leveraged stocks provides a natural safeguard against downside risks. During

market turnarounds, highly leverage companies tend to perform very poorly, which in turn impacts the conventional index.

4.3.4.5 Percentage of positive months

Following our above observations, we decided to have a look at the consistency of the indices' performance. We were able to observe in Table 7 that both indices have had positive returns in most time horizons, but we wanted to take a closer look at the consistence of these positive returns. We used the same time horizons, but we calculated the percentage of months with positive returns. We used daily returns to calculate the monthly returns with equation (2).

Table 11 - Global Equities Percentage of Postive Months

	DJIM	MSCIW
1 year	41.67%	33.33%
3 year	52.78%	52.78%
5 year	53.33%	53.33%
10 year	57.50%	54.17%
01.2003 to 01.2008	70.00%	68.33%
Total	59.88%	58.02%

Source: adapted from Bloomberg data

We are able to observe that over the 3 year and 5 year horizons, both indices have the exact amount of positive months. This is interesting because both indices have different annualized returns and annualized volatility over the same time horizons. This further supports the theory that both indices are highly, but not completely, correlated.

Another interesting observation is that between January 2003 and December 2007, DJIM had a higher percentage of positive months while having a lower annualized return and higher volatility.

4.4 United States equities

Following our analysis of the global equities market, we wanted to examine if we had the same results in the smaller regions. We started with the United States, as it is the biggest capital market in the world. In table 5, we can clearly see that the United States market is highly represented in the Global indices. In the DJIM index, the United States represents about 60.95% of the index, whereas all European countries represent only 19.12% of the index.

4.4.1 IMUS: Dow Jones Islamic Market U.S. Index

IMUS is part of the Dow Jones Islamic Market (DJIM) index family. It uses the same Sharia screening methodology explained earlier. The only difference is that it concentrates only on stocks from the United States. It is used to represent the United States Sharia-compliant equities universe.

4.4.2 SPX: Standard & Poor's 500

Created in 1957, SPX is widely viewed as the best representation of United States stock market. Therefore, we decided to use it as our conventional U.S. equities benchmark. SPX is composed of 500 companies with the highest market capitalization traded in the United States.

4.4.3 Index composition

Discrepancies in the sector allocation exist due to the Sharia-screening done on the IMUS. This is the same issue presented in point 4.3.3 above.

Table 12 – U.S. Equities Sector Allocation

Sector	IMUS	SPX
Technology	27.17%	20.60%
Health Care	18.98%	15.10%
Consumer Goods & Services	24.92%	22.50%
Industrials	12.69%	9.90%
Oil & Gas	9.40%	7.00%
Basic Materials	3.48%	2.90%
Financials	3.36%	15.70%
Telecommunications	-	2.90%
Utilities	-	3.40%

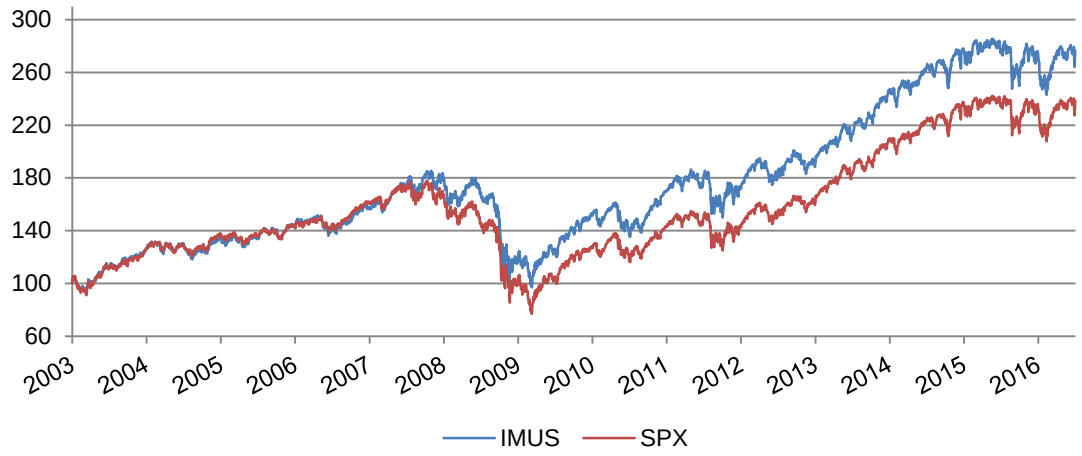
Source: adapted from June 2016 factsheets

We can see in the table above that some sectors are completely missing from IMUS, such as Telecommunications and Utilities. Furthermore, we can observe that the Technology sector is a higher contributor to the Sharia-compliant index; the same phenomenon was also present in table 6. We can deduct from the above table that the Sharia-compliant index is less diversified across the different sectors. As with all Sharia-compliant indices, the Financials sector is not well represented.

4.4.4 Risk and return profiles

We started our analysis of the United States equities market with a graphical representation of the historic price evolution with a base price of 100 starting in January 2003.

Figure 8 - U.S. Equities Historic Price



Source: adapted from Bloomberg data

In figure 8 above, we could visually see that both indices are highly correlated. The only difference observable is between mid-2007 and end of 2008 where SPX incurred higher losses than IMUS. In 2008 alone, SPX had a return of -38.49% whereas IMUS had a return of -33.32%. As explained in our analysis of the global market, the Sharia-compliant indices performed better during the financial crisis due to their lower exposure to the Financials sector.

4.4.4.1 Sharpe ratio

Our annualized returns and volatility analysis for the United States indices have very similar results as we had for our global indices as can be seen in table 20 and table 21 **Error! Reference source not found.**in the appendix.

Table 13 - U.S. Equities Sharpe Ratio

	IMUS	SPX
1 year	0.03	0.10
3 year	2.23	2.28
5 year	0.56	0.62
10 year	0.32	0.23
01.2003 to 01.2008	0.92	0.82
Total	0.42	0.35

Source: adapted from Bloomberg data

However, we could find some small differences between the global analysis and the United States analysis in the Sharpe ratios calculated in table 13. We can observe that over the past five years the conventional index has had better annualized returns than the Sharia-compliant one. The differences can be explained by the better performance of the conventional index during stable and optimistic market conditions.

4.4.4.2 Maximum drawdown and days to recovery

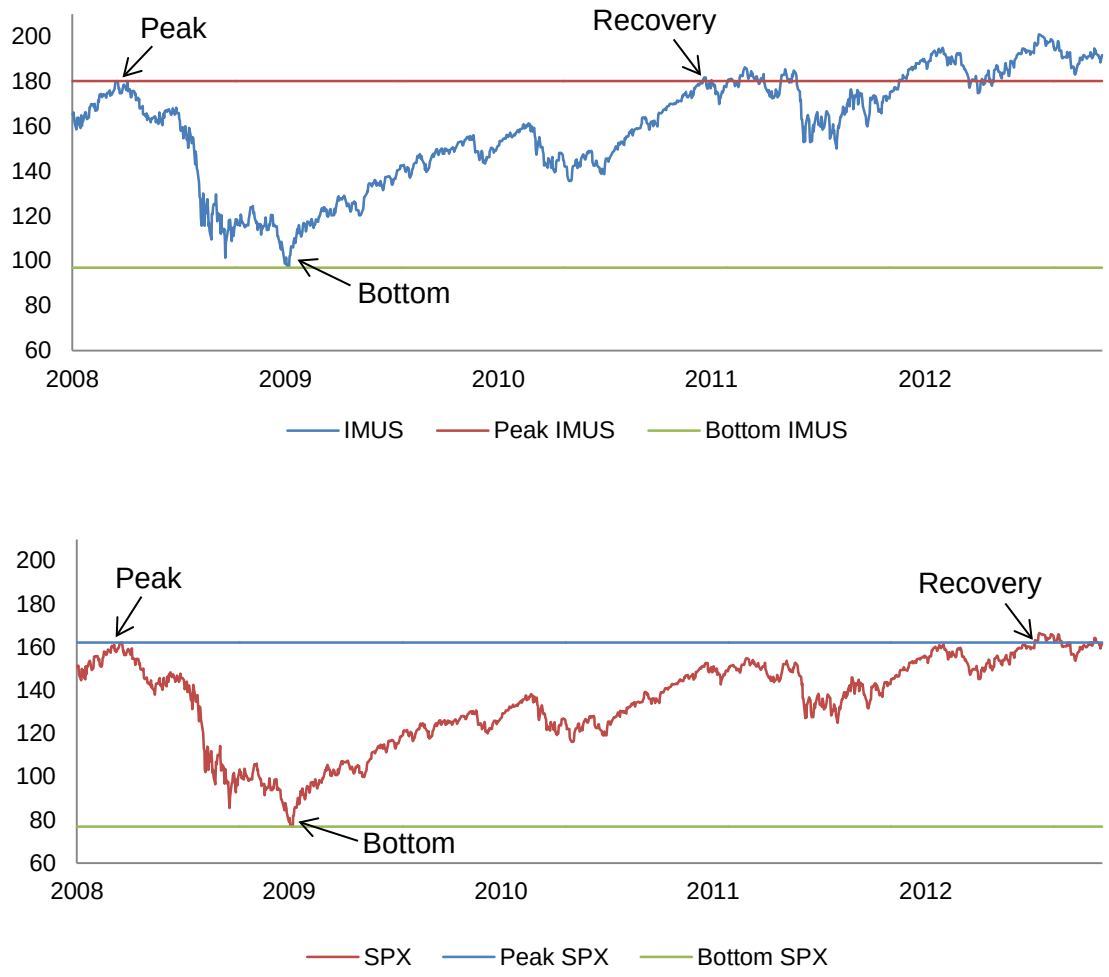
Taking a look at the maximum drawdown and days to recovery, we can observe that IMUS performed better than SPX during the market crash. Furthermore, IMUS was able to recover from its maximum drawdown in a less than two years, whereas SPX needed three and a half years to recover. The difference of 406 trading days in recovery time is very significant from an investor's point of view; in particular when we factor in the loss of about 50% during a period of less than a year.

Table 14 - U.S. Equities Maximum Drawdown and Days to Recovery

	IMUS	Dates	SPX	Dates
Peak	180.19	19/5/2008	162.15	19/5/2008
Bottom	97.02	9/3/2009	76.89	9/3/2009
MDD	-46.16%		-52.58%	
Trading Days to Recovery	508	16/2/2011	914	6/9/2012

Source: adapted from Bloomberg data

Figure 9 - U.S. Equities Maximum Drawdown and Time to Recovery



Source: adapted from Bloomberg data

Our observations are further emphasized in our graphical representation in figure 9. We could clearly see that the time to recovery is significantly longer for SPX. However, it is important to note that the recovery period for both United States indices was quicker than for both global indices observed earlier.

4.5 European equities

European equities are the second biggest contributors to the DJIM index, and the second biggest capital market in the world. We decided to concentrate our analysis of the European equities market on two indices provided by Dow Jones.

4.5.1 DJIEU: Dow Jones Islamic Market Europe Index

As with the two previous Sharia-compliant indices presented, DJIEU screens the European stock market for Sharia-compliant companies. The European equities

universe included in the index is smaller than the two previous indices. This is in line with the country allocation discussed earlier.

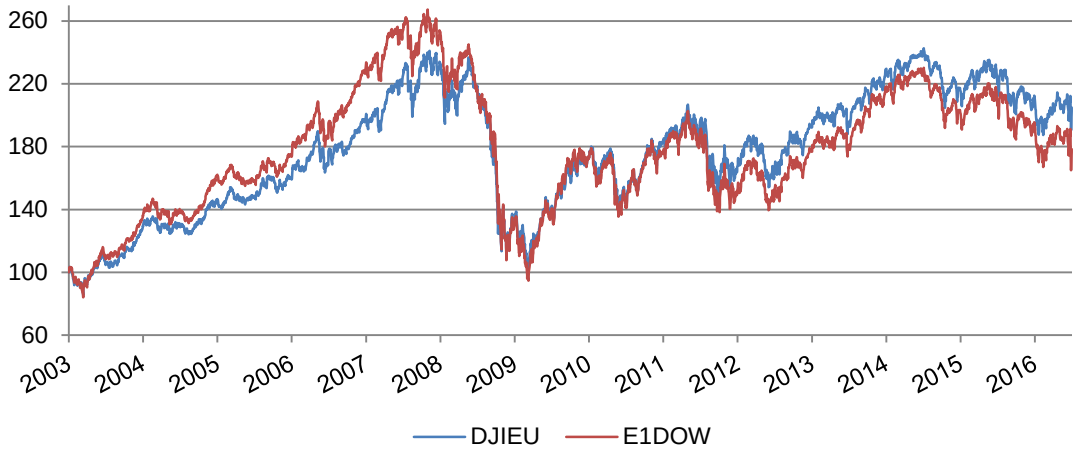
4.5.2 E1DOW: Dow Jones Europe Index

Dow Jones provides numerous indices with size and industry segmentation. We used the global European index that represents approximately 95% of Europe's total market capitalization.

4.5.3 Index comparison

Our analyses of the European equities were very similar to our previous analysis, as can be seen in the various tables in the appendix. Visually, we can observe in figure 10 below that the European equities have had a historic price movement very similar to that of the Global market.

Figure 10 - European Equities Historic Price



Source: adapted from Bloomberg data

The only notably difference between the European market and the two others analyzed earlier is the maximum drawdown, or more precisely, the time to recovery. The conventional index, E1DOW, has yet to recover from its highs of 2007-2008. On the other hand, the Sharia-compliant index did recover, though barely, from its maximum drawdown on the April 30th 2014.

4.6 Fixed Income

As presented in our study in the previous chapters, Sukuk certificates are in nature very distinct from conventional fixed income. They are structured very differently and they have differences in risk factors.

However, we wanted to observe if USD denominated Sukuk securities are priced similarly to conventional bonds or if they were in fact priced differently by the market. To do so, we decided to observe the risk and return profiles in a similar fashion to our previous analysis of the equities market.

As presented in table 4, we have selected two global indices for our analysis:

- DowJones Sukuk Total Return Index ("DJSUKUK")
- Bloomberg Barclays US Aggregate Index ("LBUSTRUU")

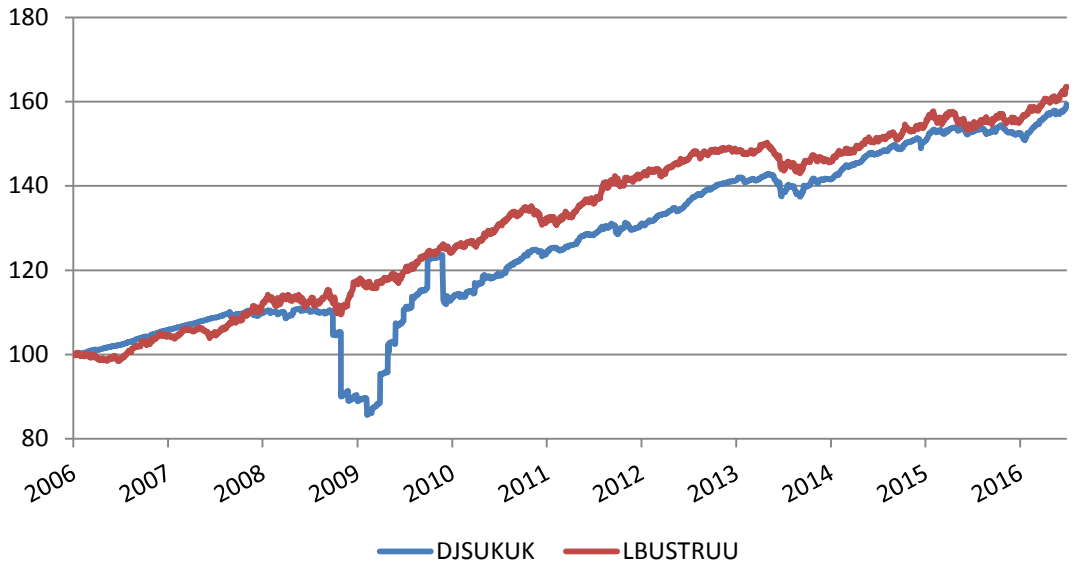
Both indices cover a global market of USD denominated fixed income securities. To qualify for inclusion in both indices, the securities must have a rating of BBB-/Bbb3 by one of the three top rating agencies: Standard & Poor's Ratings Service, Moody's or Fitch.

It is interesting to note the difference in number of constituents. LBUSTRUU has 9'977 securities in the index, while DJSUKUK only has 71. The small figure for the latter demonstrates the young nature of the USD denominated Sukuk securities.

4.6.1 Risk and return profiles

When we first started our analysis of the fixed income indices which we considered for analysis, we didn't know what to expect: Was there a visible correlation between both indices? When we extracted the historic prices from the Bloomberg Terminal and processed the data to have a base unit of 100 starting in January 2006, we were surprised to see that both indices followed a very similar trend.

Figure 11 - Fixed Income Historic Price Gross of Fees



Source: adapted from Bloomberg data

From the graphical representation of the performance over the past ten and a half years in figure 11 above, we can observe two things. Firstly, the Sharia-compliant index has had a more dramatic drop in value between 2008 and 2009. Secondly, the conventional bonds have slightly higher returns between 2010 and June 2016.

Table 15 - Fixed Income Annualized Returns and Volatility Gross of Fees

	DJSUKUK		LBUSTRUU	
	Returns	Volatility	Returns	Volatility
1 year	4.36%	1.57%	6.00%	3.34%
3 year	4.80%	1.66%	4.06%	3.32%
5 year	4.42%	1.82%	3.76%	3.24%
Total	4.54%	7.12%	4.79%	3.74%

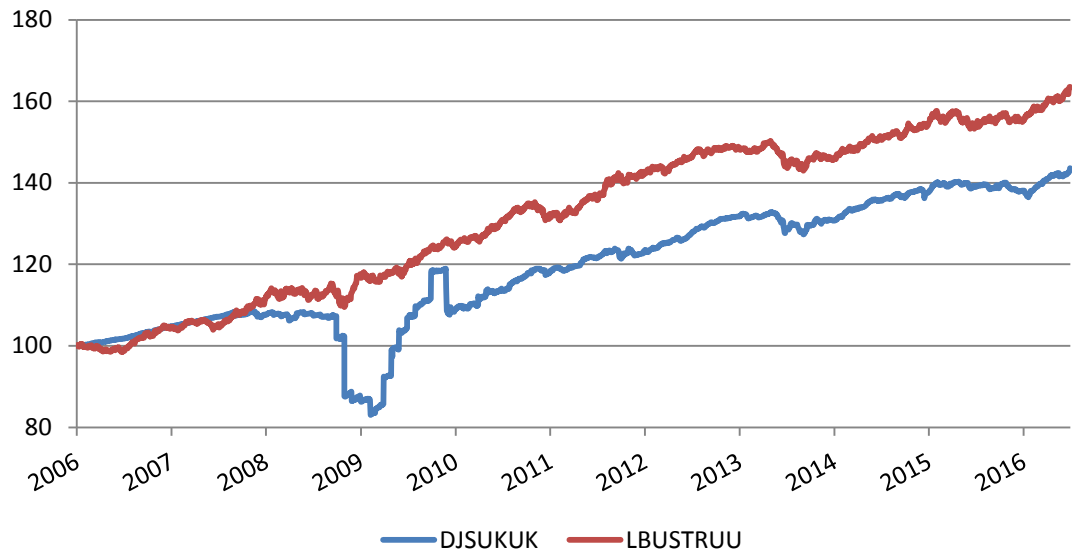
Source: adapted from Bloomberg data

Our observations are further confirmed by the annualized returns calculated in table 15. We can clearly see that DJSUKUK has a better three and five year return profiles than LBUSTRUU. Moreover, we can also see that DJSUKUK has lower annualized volatility over the same periods.

The annualized volatility of DJSUKUK is higher over the ten and a half years due to extreme volatility in 2008 and 2009 as can be observed in table 25 in the annex. In 2008, the Sharia-compliant index suffered losses of 18.73% but was able to quickly recover in 2009.

To further our analysis, we decided to take into consideration the additional fees that Sukuk investments often entail. We mentioned earlier that Sukuk usually involve additional costs due to their complex and non-standardized structures. To examine the impact of these higher charges, we decided to simulate a 1% per annum transaction fee on the DJSUKUK index paid daily. On average, we had 259.1 trading days in our data set consequently we charged approximately 0.00384% per day.

Figure 12 - Fixed Income Historic Price Net of Fees



Source: adapted from Bloomberg data

We can clearly see in figure 12 above that the 1% per annum fee we included has an adverse effect on the price movement of the Sharia-compliant index. The extra charges are further emphasized in the annualized returns presented in table 16 below. Whereas the returns over the past five years were higher for DJSUKUK on a gross of fees basis, we can observe that following the inclusion of the fees, LBUSTRUU performs better over the observed period.

Table 16 - Fixed Income Annualized Returns and Volatility Net of Fees

	DJSUKUK		LBUSTRUU	
	Returns	Volatility	Returns	Volatility
1 year	3.33%	1.57%	6.00%	3.34%
3 year	3.76%	1.66%	4.06%	3.32%
5 year	3.39%	1.82%	3.76%	3.24%
Total	3.50%	7.12%	4.79%	3.74%

Source: adapted from Bloomberg data

While the Sukuk market continues its growth and development, the effects of higher costs and fees should always be taken into consideration before making any investment decision. In the above analysis, we can perceive that a 1% per annum fee can have a significant influence on the performance of an instrument.

4.7 Limitations

While our research and analysis has produced noteworthy results, we would like to emphasize some limitations it may have. For our equities analysis, we would like to emphasis that our analysis ignores the dividend paid by each index. We focused our analysis on the price return history of each index rather than the total return history. The former only takes into consideration the price movement of each of its constituents, whereas the latter reinvests all the dividends earned into the index.

We would like to note a study taking into consideration the dividend yields of each index may provide different results. We can observe in the below table of the indicative dividend yields extracted from end of June 2016 index factsheets that the conventional indices provide a slightly higher yields.

Table 17 - Equities Indicative Dividend Yields

DJIM	MSCIW	IMUS	SPX	DJIEU	E1DOW
2.15%	2.67%	1.92%	2.18%	2.81%	3.76%

Source: adapted from June 2016 factsheets

We made the decision to exclude the dividends from our study as we wanted to observe the value creation of each index through price movements of the underlying constituents and not take into consideration the effects that dividends may have on the price. Furthermore, our limited access to a Bloomberg Terminal made it difficult to extract further data to provide a more details analysis of the difference between the price return indices and total return indices. Total return data for our selected indices were unavailable for our time horizon on free platforms such as Yahoo Finance and Google Finance.

As for the fixed income portion of our analysis, we explained in section 4.6 that the Sukuk index we used has a very limited number of constituents as USD denominated Sukuk made up only 18.31% of all issuances between 2001 and 2015 (IIFM, 2016: 34). Unfortunately, Indices for Sukuk securities are very limited. Furthermore, access to risk features often used to analyze fixed income securities was very limited so they were excluded from the study.

Conclusion

Following our analysis presented above of the equities and fixed income markets, we are able to make the following observations. First of all, in the equities market, the Sharia-compliant screening done by DJIM has positively impacted the index. Surprisingly, our data post-2008 market crash has the Sharia-compliant indices outperforming their conventional counterparts in every risk and return category we observed.

This can be explained by the screening done for the Financials sector and for companies that are structured with high debt. The latter screening is very helpful during recessions because companies with a lot of debt tend to perform worse when markets crash and investor confidence fades.

While the investment pool for Sharia-compliant equity may be more restrictive, we have clear results that show that Islamic investors can expect to have returns that are similar, or even better than conventional investors.

We recommend that Sharia-compliant investors follow the current global trend of investing in index tracking funds. These funds are not managed in an active manner by an investment team who try to outperform the markets. They are considered as passively managed meaning that the investment team does its best to duplicate a chosen index by investing in a large part of its constituents. The goal of an index tracking fund, as its name suggests, is to match the performance of the chosen index.

The passive nature of these funds has several beneficial effects to investors. Firstly, we can easily invest in index tracking funds directly on stock exchanges through ETFs[6], which signifies that we can easily invest and disinvest in them. Secondly, they have lower management fees as the investors don't expect the investment team to outperform the market, but only to have the same returns as the market, which in turn lowers the amount of transactions done and the fees related. The lower management fees are even more interesting for Sharia-compliant investors as it lowers the total costs linked to their investments, such as the Sharia Board costs.

The index tracking funds also provide great diversification for investors at a lower price. If an investor would like to have his own diversified portfolio, the transaction costs

6 Exchange traded fund (ETF): "a marketable security that tracks an index, a commodity, bonds or a basket of assets like an index fund. Unlike mutual funds, an ETF trades like a common stock on a stock exchange. ETFs typically have higher daily liquidity and lower fees than mutual fund shares, making them an attractive alternative for individual investors." (Investopedia, 2016b)

linked to each investment would be very high. Whereas if an investor buys an index tracking fund, he can have a diversified exposure to one or more markets by doing only one transaction.

As for the fixed income portion, as our analysis of Sukuk progressed, we were able to observe that they are more distinct from conventional fixed income securities than at first expected. We could observe that their structure, income generation and risks are completely different.

In conventional bonds, an investor would loan money to the issuer in return for an interest rate. In case the issuer is unable to meet the payment requirements, the bond holder would be entitled to parts of the issuing company, as determined by a court ruling. However, in Sukuk the certificate holder's income is linked directly to the performance of the underling project and if the project isn't beneficial, he would be entitled only to the value of the assets left from the project through the asset securitization. The securitized assets in certain cases could make Sukuk safer as the investor knows that if the issuer goes bankrupt, he will be entitled in all cases to the assets. However, in the case where the sale of the assets is not enough to cover the invested money, the issuer is not liable for the difference.

The biggest takeaways from the structure of Sukuk are their asset backing and the risk and profit sharing. The former enables companies to raise money only for a specific project. When a company wants to issue conventional bonds, the capital markets analyze the health of the company and its capacity to pay back the additional debt it will be contracting, with less emphasis made on the exact reason for the new debt.

However, when new Sukuk are issued, the project is central and more scrutiny is done on the feasibility of the project. It should be noted that in some Sukuk issues, the issuer provides some form of credit-enhancement; meaning that in the case the underlying project is unable to make the required payments, the issuer would compensate the Sukuk holder (Ariff, Mohamed, Safari 2014: 116). In the case of a credit-enhancement mechanism, the issuers' capacity to make payments will be very important. Another case where the issuer's capacity to make payments is paramount, is the case of an Ijarah Sukuk, in which the issuer would be paying rental payments to the SPV.

The risk and profit sharing nature of Sukuk make contracting debt by companies a little more difficult. Investors would pay more attention to projects they are financing when they share its risks with the issuing company. These features provide further incentive

for companies to start new project instead of rearranging their capital structure through debt contracting when interest rates are low.

For individual investors, investing directly in Sukuk is often very difficult due to the high prices often linked to all fixed income securities. We would advise potential investors to seek Sharia-compliant Sukuk mutual funds. As with the index tracking funds we recommended for the equities universe, a Sharia-compliant Sukuk mutual fund provides diversity in different types of Sukuk at a more affordable price for smaller investors.

In conclusion, we believe that Sharia-compliant investments have the potential to duplicate and in some case surpass their conventional counterparts with the added value of investing in a more ethical manor.

Whereas the ethical value of Sharia investments is often debated, we would like to point that it provides investment opportunities in companies that aren't overly in debt, that don't work in alcohol, tobacco, weapons and entertainment. Furthermore, Sharia-compliant investments promote public interest.

The Sharia-compliant equities universe has seen many developments over the years and is currently well researched and gaining efficiency. Conversely, the Sukuk market is still very young and needs further development. The first issue we have is the illiquidity of the market, as many investors tend to keep Sukuk until maturity. The second concern is the lack of geographical diversity in emissions. The third issue is the higher transaction costs and Sukuk emission fees that are being charged. Before an efficient market could really exist for Sukuk, these three issues need solving. We have seen positive signs over the years with an increased interest worldwide for financing and investing through Sukuk.

The biggest concern for Sharia-compliant investments is the occasionally contradictory opinions of Sharia Boards. Islamic finance needs to develop a global and unbiased regulatory organ to further develop the investment industry.

If Sukuk emissions continue their upward trend and Islamic finance regulation gains clarity, the future of Sharia-compliant investing will be very bright.

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Appendix 1: Risk and return profiles

Table 18 - European Equities Country Allocation

Country	DJIEU	E1DOW
Switzerland	27.10%	14.26%
United Kingdom	23.76%	30.54%
France	12.78%	14.35%
Germany	11.85%	12.98%
Netherlands	6.50%	4.79%
Sweden	5.43%	4.81%
Other	12.58%	18.27%

Source: adapted from Bloomberg data

Table 19 - European Equities Sector Allocation

Sector	DJIEU	E1DOW
Technology	7.75%	4.30%
Health Care	29.11%	13.29%
Consumer Goods & Services	34.03%	26.96%
Industrials	14.83%	13.83%
Oil & Gas	0.65%	7.20%
Basic Materials	11.91%	6.99%
Financials	0.50%	18.90%
Telecommunications	0.99%	4.38%
Utilities	0.23%	4.14%

Source: adapted from Bloomberg data

Table 20 - Equities Annualized Returns

	DJIM	MSCIW	IMUS	SPX	DJIEU	E1DOW
1 year	-2.11%	-5.72%	0.45%	1.73%	-6.73%	-13.49%
3 year	6.21%	3.92%	9.38%	9.33%	1.99%	0.03%
5 year	4.21%	3.16%	8.93%	9.71%	0.88%	-1.19%
10 year	4.20%	2.08%	6.79%	5.15%	1.48%	-0.88%
01.2003 to 01.2008	15.09%	16.14%	12.45%	10.79%	18.43%	20.38%
Total	6.63%	5.62%	7.83%	6.65%	5.46%	4.38%

Source: adapted from Bloomberg data

Table 21 - Equities Annualized Volatility

	DJIM	MSCIW	IMUS	SPX	DJIEU	E1DOW
1 year	15.14%	15.69%	17.66%	17.17%	20.32%	22.82%
3 year	11.62%	11.79%	13.86%	13.48%	15.63%	17.12%
5 year	14.01%	14.09%	16.03%	15.75%	19.32%	20.64%
10 year	17.50%	18.82%	21.02%	21.93%	24.77%	25.93%
01.2003 to 01.2008	11.42%	11.13%	13.61%	13.21%	15.20%	15.12%
Total	16.11%	16.33%	18.57%	19.15%	21.77%	22.54%

Source: adapted from Bloomberg data

Table 22 - Equities Sharpe Ratio

	DJIM	MSCIW	IMUS	SPX	DJIEU	E1DOW
1 year	-0.14	-0.36	0.03	0.10	-0.33	-0.59
3 year	1.71	1.04	2.23	2.28	0.39	0.00
5 year	0.30	0.22	0.56	0.62	0.05	-0.06
10 year	0.24	0.11	0.32	0.23	0.06	-0.03
01.2003 to 01.2008	1.32	1.45	0.92	0.82	1.21	1.35
Total	0.41	0.34	0.42	0.35	0.25	0.19

Source: adapted from Bloomberg data

Table 23 - Equities Annual Returns

Year	DJIM	MSCIW	IMUS	SPX	DJIEU	E1DOW
2003	28.11%	31.62%	26.85%	26.38%	29.58%	36.26%
2004	8.91%	13.30%	6.38%	8.99%	12.98%	18.64%
2005	8.58%	8.83%	5.22%	3.00%	8.62%	7.32%
2006	14.53%	18.78%	10.76%	13.62%	24.09%	32.08%
2007	16.39%	9.64%	14.33%	3.53%	18.05%	10.30%
2008	-38.87%	-43.54%	-33.32%	-38.49%	-43.06%	-48.48%
2009	33.80%	31.52%	26.27%	23.45%	30.69%	32.97%
2010	12.81%	10.42%	12.16%	12.78%	6.07%	2.27%
2011	-7.12%	-9.42%	1.53%	0.00%	-9.18%	-14.15%
2012	11.07%	13.44%	11.18%	13.41%	15.15%	16.31%
2013	19.24%	20.25%	28.98%	29.60%	19.35%	23.45%
2014	4.49%	2.10%	10.82%	11.39%	-6.22%	-7.91%
2015	-2.22%	-4.26%	-0.89%	-0.73%	-2.66%	-4.14%
2016	3.23%	-0.04%	3.85%	5.45%	-4.29%	-14.26%

Source: adapted from Bloomberg data

Table 24 - Equities Annual Volatility

Year	DJIM	MSCIW	IMUS	SPX	DJIEU	E1DOW
2003	13.52%	13.49%	17.02%	17.04%	17.51%	17.88%
2004	10.18%	9.72%	12.07%	11.07%	13.17%	13.27%
2005	8.73%	7.92%	10.97%	10.26%	10.99%	10.68%
2006	10.79%	10.27%	11.60%	10.00%	15.58%	15.10%
2007	13.12%	13.18%	15.31%	15.92%	17.64%	17.42%
2008	32.69%	32.98%	38.44%	40.97%	42.94%	42.30%
2009	21.38%	23.12%	23.81%	27.23%	28.71%	31.30%
2010	15.82%	16.47%	17.37%	18.02%	22.45%	24.68%
2011	20.94%	20.88%	23.37%	23.23%	28.35%	29.64%
2012	12.72%	12.61%	13.29%	12.69%	19.94%	20.69%
2013	9.57%	9.82%	10.95%	11.05%	14.03%	14.48%
2014	9.28%	8.83%	11.94%	11.35%	11.60%	12.38%
2015	13.08%	12.97%	15.78%	15.46%	16.26%	17.03%
2016	15.04%	16.28%	16.60%	16.03%	22.68%	26.57%

Source: adapted from Bloomberg data

Table 25 - Fixed Income Annual Returns and Volatility

	DJSUKUK				LBUSTRUU	
Year	**Returns Gross of Fees**	**Returns Net of Fees**	**Volatility**		**Returns**	**Volatility**
2006	5.67%	4.63%	1.00%		4.16%	2.77%
2007	3.81%	2.78%	1.50%		6.97%	3.50%
2008	-18.73%	-19.54%	15.72%		5.24%	5.90%
2009	27.13%	25.87%	15.79%		5.93%	4.48%
2010	9.40%	8.31%	3.39%		6.54%	3.71%
2011	5.46%	4.42%	2.36%		7.84%	3.84%
2012	8.00%	6.93%	1.00%		4.22%	2.49%
2013	0.22%	-0.77%	2.26%		-2.02%	3.30%
2014	6.37%	5.32%	1.52%		5.97%	2.65%
2015	1.24%	0.24%	1.45%		0.55%	3.77%
2016	4.55%	4.04%	1.21%		5.31%	2.12%

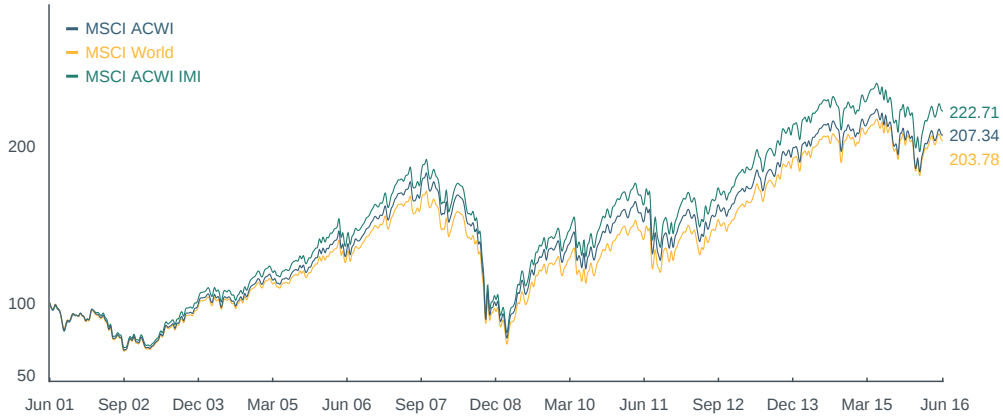
Source: adapted from Bloomberg data

Appendix 2: Factsheets

MSCI ACWI (USD)

MSCI ACWI captures large and mid cap representation across 23 Developed Markets (DM) and 23 Emerging Markets (EM) countries*. With 2,481 constituents, the index covers approximately 85% of the global investable equity opportunity set.

CUMULATIVE INDEX PERFORMANCE - NET RETURNS (USD) (JUN 2001 – JUN 2016)



ANNUAL PERFORMANCE (%)

Year	MSCI ACWI	MSCI World	MSCI ACWI IMI
2015	-2.36	-0.87	-2.19
2014	4.16	4.94	3.84
2013	22.80	26.68	23.55
2012	16.13	15.83	16.38
2011	-7.35	-5.54	-7.89
2010	12.67	11.76	14.35
2009	34.63	29.99	36.41
2008	-42.19	-40.71	-42.34
2007	11.66	9.04	11.16
2006	20.95	20.07	20.95
2005	10.84	9.49	11.54
2004	15.23	14.72	16.42
2003	33.99	33.11	35.54
2002	-19.32	-19.89	-17.58

INDEX PERFORMANCE — NET RETURNS (%) (JUN 30, 2016)

	1 Mo	3 Mo	1 Yr	YTD	ANNUALIZED 3 Yr	5 Yr	10 Yr	Since Dec 29, 2000
MSCI ACWI	-0.61	0.99	-3.73	1.23	6.03	5.38	4.26	4.09
MSCI World	-1.12	1.01	-2.78	0.66	6.95	6.63	4.43	3.95
MSCI ACWI IMI	-0.72	1.06	-3.87	1.36	6.13	5.43	4.48	4.63

FUNDAMENTALS (JUN 30, 2016)

Div Yld (%)	P/E	P/E Fwd	P/BV
2.67	19.21	15.22	1.99
2.66	20.13	15.73	2.08
2.60	20.02	15.47	1.94

INDEX RISK AND RETURN CHARACTERISTICS (JUN 30, 2016)

	Turnover (%) [1]	ANNUALIZED STD DEV (%) [2] 3 Yr	5 Yr	10 Yr	SHARPE RATIO [2, 3] 3 Yr	5 Yr	10 Yr	Since Dec 29, 2000	MAXIMUM DRAWDOWN (%)	Period YYYY-MM-DD
MSCI ACWI	3.18	11.82	13.54	16.99	0.54	0.44	0.26	0.22	58.38	2007-10-31—2009-03-09
MSCI World	2.51	11.70	13.17	16.50	0.61	0.54	0.27	0.22	57.82	2007-10-31—2009-03-09
MSCI ACWI IMI	3.17	11.81	13.65	17.19	0.54	0.44	0.27	0.25	58.59	2007-10-31—2009-03-09

[1] Last 12 months [2] Based on monthly net returns data [3] Based on BBA LIBOR 1M

* DM countries include: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Hong Kong, Ireland, Israel, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, the UK and the US. EM countries include: Brazil, Chile, China, Colombia, Czech Republic, Egypt, Greece, Hungary, India, Indonesia, Korea, Malaysia, Mexico, Peru, Philippines, Poland, Russia, Qatar, South Africa, Taiwan, Thailand, Turkey and United Arab Emirates.

The MSCI ACWI was launched on Jan 01, 2001. Data prior to the launch date is back-tested data (i.e. calculations of how the index might have performed over that time period had the index existed). There are frequently material differences between back-tested performance and actual results. Past performance -- whether actual or back-tested -- is no indication or guarantee of future performance.

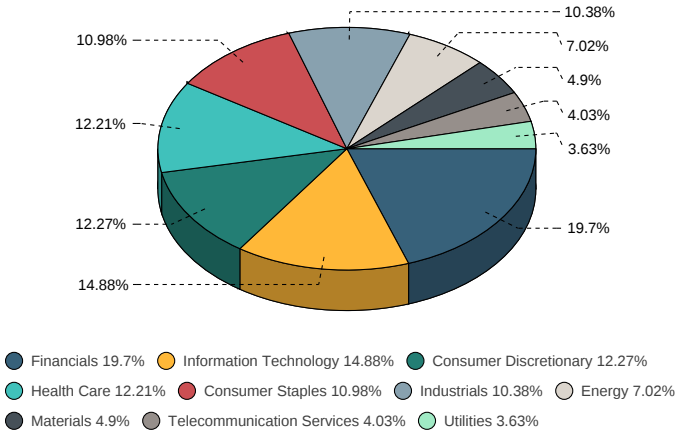
INDEX CHARACTERISTICS

	MSCI ACWI
Number of Constituents	2,481
	Mkt Cap (USD Millions)
Index	35,719,172.66
Largest	530,062.13
Smallest	183.19
Average	14,397.09
Median	5,677.83

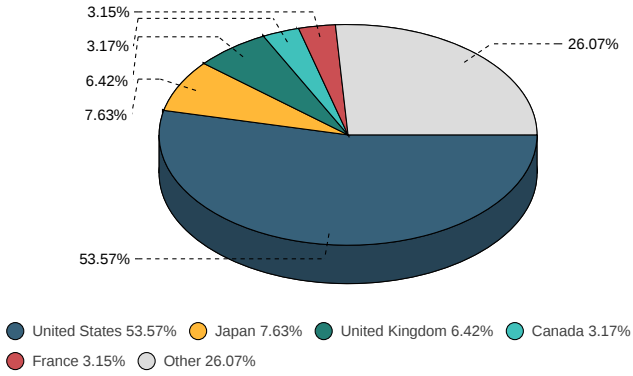
TOP 10 CONSTITUENTS

	Country	Mkt Cap (USD Billions)	Index Wt. (%)	Sector	Sector Wt. (%)
APPLE	US	530.06	1.48	Info Tech	10.0
EXXON MOBIL CORP	US	389.28	1.09	Energy	15.5
MICROSOFT CORP	US	384.48	1.08	Info Tech	7.2
JOHNSON & JOHNSON	US	334.71	0.94	Health Care	7.7
GENERAL ELECTRIC CO	US	293.73	0.82	Industrials	7.9
AMAZON.COM	US	286.40	0.80	Cons Discr	6.5
AT&T	US	265.79	0.74	Telecom Srvcs	18.5
FACEBOOK A	US	262.27	0.73	Info Tech	4.9
NESTLE	CH	245.95	0.69	Cons Staples	6.3
PROCTER & GAMBLE CO	US	229.00	0.64	Cons Staples	5.8
Total		3,221.67	9.02		

SECTOR WEIGHTS



COUNTRY WEIGHTS



INDEX METHODOLOGY

The index is based on the MSCI Global Investable Market Indexes (GIMI) Methodology—a comprehensive and consistent approach to index construction that allows for meaningful global views and cross regional comparisons across all market capitalization size, sector and style segments and combinations. This methodology aims to provide exhaustive coverage of the relevant investment opportunity set with a strong emphasis on index liquidity, investability and replicability. The index is reviewed quarterly—in February, May, August and November—with the objective of reflecting change in the underlying equity markets in a timely manner, while limiting undue index turnover. During the May and November semi-annual index reviews, the index is rebalanced and the large and mid capitalization cutoff points are recalculated.

ABOUT MSCI

For more than 40 years, MSCI' research-based indexes and analytics have helped the world' leading investors build and manage better portfolios. Clients rely on our offerings for deeper insights into the drivers of performance and risk in their portfolios, broad asset class coverage and innovative research. Our line of products and services includes indexes, analytical models, data, real estate benchmarks and ESG research. MSCI serves 98 of the top 100 largest money managers, according to the most recent P&I ranking. For more information, visit us at www.msci.com.

Dow Jones Islamic Market™ World Index

Fact Sheet

Stated Objective

To track stocks traded globally that pass rules-based screens for compliance with Islamic investment guidelines.

Key Features

- The screens are designed to exclude companies with financial ratios or lines of business that are typically viewed as incompatible with Shari'ah investment guidelines.
- The Dow Jones Islamic Market™ World Index was first calculated on May 24, 1999.

Descriptive Statistics

		Market Capitalization (Billions)						Component Weight (%)	
Currency	Component Number	Full	Float-Adjusted	Mean	Median	Largest	Smallest	Largest	Smallest
USD	2593	22,216.4	18,331.1	7.1	1.2	523.6	0.0	2.86	0.00

Data calculated as of end of June, 2016.

Mean, median, largest component and smallest component values are based on float-adjusted market capitalization.

Performance

	Price Return (%)				Annualized Price Return (%)				
Currency	1-Month	3-Month	YTD	2015	1-Year	3-Year	5-Year	10-Year	Since Inception*
USD	-0.23	0.97	1.60	-2.22	-2.11	6.22	4.21	4.20	2.53

Source: S&P Dow Jones Indices LLC and/or its affiliates. Data as of end of June, 2016. Charts and graphs are provided for illustrative purposes. Past performance is no guarantee of future results. These charts and graphs may reflect hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

*Inception date: December 31, 1995.

Fundamentals

P/E (Including Negative)		P/E (Excluding Negative)					
Trailing	Projected	Trailing	Projected	P/B	Dividend Yield	P/Sales	P/Cash Flow
25.16	18.97	21.18	18.35	3.40	2.15	2.11	13.66

Data calculated in USD as of end of June, 2016.

Symbols

	Price Return
	USD
Suggested Symbol	DJIM
ISIN	XC0006607433
Bloomberg	DJIM
Bridge	US&JIM
Comstock	DJIM
Reuters	.DJIMI
Thomson	.DJIM
Thomson GlobalTopic	DJIM.CT
Telekurs	DJIM

Country Allocation

United States	60.95%
Japan	6.76%
Switzerland	5.11%
United Kingdom	4.48%
China	2.63%
France	2.41%
Germany	2.24%
Canada	2.20%
Taiwan	1.55%
India	1.28%
Netherlands	1.23%
South Korea	1.15%
Australia	1.12%
Sweden	1.02%
Denmark	0.95%
Hong Kong	0.60%
South Africa	0.50%
Spain	0.39%
Malaysia	0.32%
Finland	0.27%
Brazil	0.27%
Indonesia	0.27%
Thailand	0.23%
Ireland	0.21%
Singapore	0.21%
Italy	0.19%
Norway	0.16%
New Zealand	0.15%
Belgium	0.14%
Mexico	0.14%
United Arab Emirates	0.13%

Turkey	0.10%
Russia	0.09%
Philippines	0.09%
Chile	0.07%
Qatar	0.07%
Poland	0.06%
Kuwait	0.06%
Austria	0.04%
Peru	0.04%
Morocco	0.02%
Portugal	0.02%
Oman	0.02%
Hungary	0.02%
Egypt	0.01%
Romania	0.01%
Luxembourg	0.01%
Slovenia	0.01%
Greece	0.01%
Bahrain	0.01%
Jordan	0.00%
Czech Republic	0.00%
Colombia	0.00%
Sri Lanka	0.00%
Bulgaria	0.00%
Lithuania	0.00%
Estonia	0.00%
Latvia	0.00%

Data calculated in USD as of end of June, 2016.

Sector Allocation

Technology	21.79%
Health Care	19.83%
Consumer Goods	16.20%
Industrials	14.12%
Consumer Services	10.10%
Oil & Gas	6.91%
Basic Materials	6.21%
Financials	2.79%
Telecommunications	1.65%
Utilities	0.41%

Data calculated in USD as of end of June, 2016.

Sectors are based on the ten industries defined by the proprietary classification system as described at www.djindexes.com

Quick Facts

Component Number	Variable
Weighting	Float-adjusted market capitalization
Review Frequency	Quarterly
Base Value/Base Date	857.95 as of December 31, 1995
Calculation Frequency	Every 5 minutes
Dividend Treatment	Price return and total return versions are available. The total return version of the index is calculated with net dividends reinvested.
Estimated Back-Tested History Availability	Available daily back to December 31, 1995
Launch Date	May 24, 1999

For more information on the Dow Jones Islamic Market™ World Index,
email **index_services@spdji.com**
or call Americas +1.212.438.2046 | Asia +86.10.6569.2770 | EMEA : +44.20.7176.8888
Learn more at **www.djindexes.com.**

Dow Jones Islamic Market™ World Index

Fact Sheet

All information as of end of June, 2016

Source: S&P Dow Jones Indices LLC.

The launch date of the Dow Jones Islamic Market™ World Index was May 24, 1999.

All information presented prior to the index launch date is back-tested. Back-tested performance is not actual performance, but is hypothetical. The back-test calculations are based on the same methodology that was in effect when the index was officially launched. Past performance is not a guarantee of future results. Please see the Performance Disclosure at http://www.spindices.com/regulatory-affairs-disclaimers/ for more information regarding the inherent limitations associated with back-tested performance.

Ed 07-05-16, FACT-14-41-063016

S&P Dow Jones Indices

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Dow Jones Islamic Market™ Europe Index

Fact Sheet

Stated Objective

To track stocks traded in Europe that pass rules-based screens for compliance with Islamic investment guidelines.

Key Features

- The screens are designed to exclude companies with financial ratios or lines of business that are typically viewed as incompatible with Shari'ah investment guidelines.
- The Dow Jones Islamic Market™ Europe Index was first calculated on May 24, 1999.

Descriptive Statistics

		Market Capitalization (Billions)						Component Weight (%)	
Currency	Component Number	Full	Float-Adjusted	Mean	Median	Largest	Smallest	Largest	Smallest
USD	318	4,216.3	3,457.5	10.9	3.6	246.0	0.1	7.11	0.00

Data calculated as of end of June, 2016.

Mean, median, largest component and smallest component values are based on float-adjusted market capitalization.

Performance

	Price Return (%)				Annualized Price Return (%)				
Currency	1-Month	3-Month	YTD	2015	1-Year	3-Year	5-Year	10-Year	Since Inception*
USD	-1.32	-0.70	-2.17	-2.66	-6.73	1.99	0.88	1.48	1.62

Source: S&P Dow Jones Indices LLC and/or its affiliates. Data as of end of June, 2016. Charts and graphs are provided for illustrative purposes. Past performance is no guarantee of future results. These charts and graphs may reflect hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

*Inception date: December 29, 1995.

Fundamentals

P/E (Including Negative)		P/E (Excluding Negative)					
Trailing	Projected	Trailing	Projected	P/B	Dividend Yield	P/Sales	P/Cash Flow
24.08	18.11	22.45	18.03	3.36	2.81	1.96	13.78

Data calculated in USD as of end of June, 2016.

S&P Dow Jones Indices
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Symbols

	Price Return
	USD
Suggested Symbol	DJIEU
ISIN	US26058N1054
Bloomberg	DJIEU
Bridge	US&IEU
Comstock	N/A
Reuters	.DJIEU
Thomson	.DIIEU
Thomson GlobalTopic	DIIEU.CT
Telekurs	DJIEU

Country Allocation

Switzerland	27.10%
United Kingdom	23.76%
France	12.78%
Germany	11.85%
Netherlands	6.50%
Sweden	5.43%
Denmark	5.02%
Spain	2.05%
Finland	1.45%
Ireland	1.11%
Italy	0.99%
Norway	0.83%
Belgium	0.73%
Austria	0.24%
Portugal	0.11%
Luxembourg	0.05%

Data calculated in USD as of end of June, 2016.

Sector Allocation

Health Care	29.11%
Consumer Goods	26.07%
Industrials	14.83%
Basic Materials	11.91%
Consumer Services	7.96%
Technology	7.75%
Telecommunications	0.99%
Oil & Gas	0.65%
Financials	0.50%
Utilities	0.23%

Data calculated in USD as of end of June, 2016.

Sectors are based on the ten industries defined by the proprietary classification system as described at www.djindexes.com

Quick Facts

Component Number	Variable
Weighting	Float-adjusted market capitalization
Review Frequency	Quarterly
Base Value/Base Date	1085.02 as of December 29, 1995
Calculation Frequency	Every 5 minutes
Dividend Treatment	Price return and total return versions are available. The total return version of the index is calculated with net dividends reinvested.
Estimated Back-Tested History Availability	Available daily back to December 29, 1995
Launch Date	May 24, 1999

For more information on the Dow Jones Islamic Market™ Europe Index,
email **index_services@spdji.com**
or call Americas +1.212.438.2046 | Asia +86.10.6569.2770 | EMEA : +44.20.7176.8888
Learn more at **www.djindexes.com.**

Dow Jones Islamic Market™ Europe Index

Fact Sheet

All information as of end of June, 2016

Source: S&P Dow Jones Indices LLC.

The launch date of the Dow Jones Islamic Market™ Europe Index was May 24, 1999.

All information presented prior to the index launch date is back-tested. Back-tested performance is not actual performance, but is hypothetical. The back-test calculations are based on the same methodology that was in effect when the index was officially launched. Past performance is not a guarantee of future results. Please see the Performance Disclosure at http://www.spindices.com/regulatory-affairs-disclaimers/ for more information regarding the inherent limitations associated with back-tested performance.

Ed 07-05-16, FACT-14-40-063016

S&P Dow Jones Indices

An S&P Global Division

Dow Jones **Europe Indices**

Fact Sheet

Dow Jones Europe Index

Size-Segment Indices

Industry Indices

Stated Objective

To provide broad coverage of markets in the Europe region that are open to foreign investment. The indices currently represent the following countries:

Austria	Belgium	Denmark	Finland	France	Germany	Ireland	Italy	Luxembourg
Netherlands	Norway	Portugal	Spain	Sweden	Switzerland	United Kingdom		

Key Features

- The Dow Jones Europe Index covers approximately 95% of the market capitalization of the represented countries.
- Country indices are maintained for each represented market.
- The industry indices are created according to the proprietary classification system definitions described at www.djindexes.com. They are maintained at both the country and regional level. More-granular sector indices are also available.
- The size-segment indices (large-cap, mid-cap and small-cap) are defined by cumulative market capitalizations. They are maintained at both the country and regional level.
- The Dow Jones Europe Indices were first calculated on September 18, 2000.

Descriptive Statistics

		Market Capitalization (Billions)						Component Weight (%)	
Index Name	Component Number	Full	Float-Adjusted	Mean	Median	Largest	Smallest	Largest	Smallest
DJ Europe Index	887	10,457.5	8,310.4	9.4	3.2	246.0	0.0	2.96	0.00
DJ Europe Large-Cap Index	205	7,476.4	6,049.1	29.5	19.0	246.0	0.1	4.07	0.00
DJ Europe Mid-Cap Index	266	1,971.3	1,497.6	5.6	5.1	18.5	0.3	1.24	0.02
DJ Europe Small-Cap Index	416	1,009.8	763.7	1.8	1.6	9.8	0.0	1.28	0.00
Basic Materials	60	681.0	581.2	9.7	4.3	82.7	0.4	14.23	0.07
Consumer Goods	99	2,222.1	1,617.9	16.3	5.6	246.0	0.0	15.20	0.00
Consumer Services	118	890.1	622.3	5.3	2.5	37.3	0.1	5.99	0.01
Financials	209	1,906.5	1,570.6	7.5	2.6	121.5	0.1	7.74	0.01
Health Care	57	1,245.5	1,104.8	19.4	3.7	216.1	0.4	19.56	0.03

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Industrials	211	1,460.1	1,149.7	5.4	2.8	81.5	0.0	7.09	0.00
Oil & Gas	37	690.6	598.4	16.2	2.5	119.5	0.0	19.96	0.00
Technology	41	416.0	357.4	8.7	2.5	71.5	0.4	20.01	0.12
Telecommunications	25	485.7	364.4	14.6	4.5	80.7	0.9	22.14	0.26
Utilities	30	459.9	343.8	11.5	7.3	57.4	0.4	16.71	0.13

Data calculated as of end of June, 2016.

Mean, median, largest component and smallest component values are based on float-adjusted market capitalization.

Performance

	Total Return (%)				Annualized Total Return (%)				
Index Name	1-Month	3-Month	YTD	2015	1-Year	3-Year	5-Year	10-Year	Since Inception*
DJ Europe Index	-4.91	-3.04	-5.35	-1.61	-10.90	2.71	1.58	1.98	6.95
Size-Segment Indices									
DJ Europe Large-Cap Index	-3.66	-1.62	-4.41	-4.13	-11.25	1.64	0.90	1.35	6.55
DJ Europe Mid-Cap Index	-7.61	-6.67	-7.65	4.49	-10.30	5.59	3.24	3.39	8.30
DJ Europe Small-Cap Index	-9.05	-6.57	-8.07	7.75	-9.23	6.25	4.17	4.77	7.49
Industry Index									
Basic Materials	0.33	-1.65	1.78	-17.46	-17.66	-2.60	-6.09	2.51	8.75
Consumer Goods	-1.95	-1.29	-0.07	6.75	0.61	6.74	7.41	9.70	9.67
Consumer Services	-9.01	-9.91	-10.35	2.91	-13.88	3.66	4.29	2.82	5.73
Financials	-14.39	-10.99	-20.86	-3.06	-27.33	-2.58	-3.05	-5.41	4.56
Health Care	0.59	6.59	-1.35	4.87	-3.38	7.84	9.91	6.62	9.98
Industrials	-6.32	-4.61	-1.32	-1.45	-7.40	3.09	1.23	4.37	7.80
Oil & Gas	7.33	11.39	16.88	-16.01	-0.34	-1.75	-2.90	-0.46	7.48
Technology	-5.56	-5.67	-6.02	4.72	-3.88	7.94	6.00	2.24	5.71
Telecommunications	-6.56	-7.06	-8.92	1.16	-13.90	6.88	2.16	4.65	7.74
Utilities	1.19	2.77	2.60	-10.06	-0.87	4.77	-1.38	0.44	8.02

Source: S&P Dow Jones Indices LLC and/or its affiliates. Data as of end of June, 2016. Charts and graphs are provided for illustrative purposes. Past performance is no guarantee of future results. These charts and graphs may reflect hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

*Inception date: December 31, 1991.

Fundamentals

Index Name	P/E (Including Negative) Trailing	P/E (Including Negative) Projected	P/E (Excluding Negative) Trailing	P/E (Excluding Negative) Projected	P/B	Dividend Yield	P/Sales	P/Cash Flow
DJ Europe Index	27.37	15.24	17.49	15.03	1.66	3.76	1.22	7.93
Size-Segment Indices								
DJ Europe Large-Cap Index	29.85	14.98	17.94	14.93	1.62	4.03	1.31	7.23
DJ Europe Mid-Cap Index	19.88	15.60	16.37	15.18	1.77	3.16	1.01	10.14
DJ Europe Small-Cap Index	29.84	16.79	16.65	15.52	1.78	2.82	1.07	12.01
Industry Index								
Basic Materials	NMF	17.35	17.92	16.94	1.56	3.51	0.87	6.51
Consumer Goods	19.62	16.37	18.75	16.37	2.88	2.81	1.46	12.74
Consumer Services	20.64	16.42	18.14	16.23	2.54	3.79	0.78	8.68
Financials	14.03	10.16	10.46	9.94	0.76	5.29	1.46	4.38
Health Care	31.34	18.72	30.47	18.59	4.40	2.83	3.70	17.44
Industrials	26.32	15.96	20.53	15.86	2.43	2.93	0.91	11.25
Oil & Gas	NMF	21.89	31.58	20.32	1.31	5.89	0.89	7.62
Technology	25.98	18.44	24.93	18.44	2.89	1.88	2.45	18.90
Telecommunications	57.20	18.04	17.37	17.90	1.68	4.96	1.29	4.91
Utilities	NMF	15.20	17.51	15.20	1.53	4.41	0.67	5.33

Data calculated in USD as of end of June, 2016.

Symbols

Index Name	Suggested Symbol	ISIN	Bloomberg	Bridge	Comstock	Reuters	Thomson	Thomson GlobalTopic	Telekurs
Price Return									
DJ Europe Index	E1DOW	XC0006974940	E1DOW	US&DES	E1DOW	.E1DOW	.DJWE	DJWE.CT	E1DOW
Basic Materials	E1BSC	XC0006885245	E1BSC	US&EBS	E1BSC	.E1BSC	.DJEBS	DJEBS.CT	E1BSC
Consumer Goods	E1NCY	XC0006885260	E1NCY	US&ENC	E1NCY	.E1NCY	.DJENC	DJENC.CT	E1NCY
Consumer Services	E1CYC	XC0006885252	E1CYC	US&ECY	E1CYC	.E1CYC	.DJECY	DJECY.CT	E1CYC
Financials	E1FIN	XC0006885286	E1FIN	US&EFI	E1FIN	.E1FIN	.DJEFI	DJEFI.CT	E1FIN
Health Care	E1HCR	XC0006885294	E1HCR	US&EHC	E1HCR	.E1HCR	.DEHCR	DEHCR.CT	E1HCR
Industrials	E1IDU	XC0006885419	E1IDU	US&EID	E1IDU	.E1IDU	.DJEID	DJEID.CT	E1IDU
Oil & Gas	E1ENE	XC0006885278	E1ENE	US&EEN	E1ENE	.E1ENE	.DJEEN	DJEEN.CT	E1ENE
Technology	E1TEC	XC0006885427	E1TEC	US&ETE	E1TEC	.E1TEC	.DJETE	DJETE.CT	E1TEC
Telecommunications	E1TLS	XC0006885435	E1TLS	US&ETL	E1TLS	.E1TLS	.DETLC	DETLC.CT	E1TLS
Utilities	E1UTI	XC0006885443	E1UTI	US&EUT	E1UTI	.E1UTI	.DJEUT	DJEUT.CT	E1UTI

Country Allocation

United Kingdom	30.54%
France	14.35%
Switzerland	14.26%
Germany	12.98%
Sweden	4.81%
Netherlands	4.79%
Spain	4.61%
Italy	3.41%
Denmark	2.98%
Belgium	2.43%
Finland	1.73%
Ireland	1.09%
Norway	1.02%
Austria	0.41%
Luxembourg	0.32%
Portugal	0.28%

Data calculated in USD as of end of June, 2016.

Sector Allocation

Consumer Goods	19.47%
Financials	18.90%
Industrials	13.83%
Health Care	13.29%
Consumer Services	7.49%
Oil & Gas	7.20%
Basic Materials	6.99%
Telecommunications	4.38%
Technology	4.30%
Utilities	4.14%

Data calculated in USD as of end of June, 2016.

Sectors are based on the ten industries defined by the proprietary classification system as described at www.djindexes.com

Quick Facts

Component Number	Variable
Weighting	Float-adjusted market capitalization
Review Frequency	Quarterly, in March, June, September and December
Base Value/Base Date	100 as of December 31, 1991
Calculation Frequency	Every 5 minutes, 24 hours daily
Dividend Treatment	Price return and total return versions are available. The total return versions of the indices are calculated with net dividends reinvested.
Estimated Back-Tested History Availability	Available daily back to December 31, 1991
Launch Date	September 18, 2000

For more information on the Dow Jones Europe Indices,
email index_services@spdji.com
or call Americas +1.212.438.2046 | Asia +86.10.6569.2770 | EMEA : +44.20.7176.8888
Learn more at http://www.djindexes.com.

All information as of end of June, 2016

Source: S&P Dow Jones Indices LLC.

The launch date of the Dow Jones Europe Indices was September 18, 2000.

All information presented prior to the index launch date is back-tested. Back-tested performance is not actual performance, but is hypothetical. The back-test calculations are based on the same methodology that was in effect when the index was officially launched. Past performance is not a guarantee of future results. Please see the Performance Disclosure at http://www.spindices.com/regulatory-affairs-disclaimers/ for more information regarding the inherent limitations associated with back-tested performance.

Ed 07-05-16, FACT-100-337-063016

Dow Jones Islamic Market™ U.S. Index

Fact Sheet

Stated Objective

To track stocks traded in the U.S. that pass rules-based screens for compliance with Islamic investment guidelines.

Key Features

- The screens are designed to exclude companies with financial ratios or lines of business that are typically viewed as incompatible with Shari'ah investment guidelines.
- The Dow Jones Islamic Market™ U.S. Index was first calculated on May 24, 1999.

Descriptive Statistics

		Market Capitalization (Billions)						Component Weight (%)	
Currency	Component Number	Full	Float-Adjusted	Mean	Median	Largest	Smallest	Largest	Smallest
USD	521	11,715.1	11,172.8	21.4	6.5	523.6	0.4	4.69	0.00

Data calculated as of end of June, 2016.

Mean, median, largest component and smallest component values are based on float-adjusted market capitalization.

Performance

	Price Return (%)				Annualized Price Return (%)				
Currency	1-Month	3-Month	YTD	2015	1-Year	3-Year	5-Year	10-Year	Since Inception*
USD	-0.33	1.00	1.91	-0.89	0.45	9.38	8.93	6.79	3.46

Source: S&P Dow Jones Indices LLC and/or its affiliates. Data as of end of June, 2016. Charts and graphs are provided for illustrative purposes. Past performance is no guarantee of future results. These charts and graphs may reflect hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

*Inception date: December 29, 1995.

Fundamentals

P/E (Including Negative)		P/E (Excluding Negative)					
Trailing	Projected	Trailing	Projected	P/B	Dividend Yield	P/Sales	P/Cash Flow
25.96	19.07	21.51	18.33	4.08	1.92	2.22	14.01

Data calculated in USD as of end of June, 2016.

S&P Dow Jones Indices
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Symbols

	Total Return	Price Return
	USD	USD
Suggested Symbol	IMUST	IMUS
ISIN	N/A	XC0006607441
Bloomberg	IMUST	IMUS
Bridge	US&IMUST	US&IMU
Comstock	IMUST	IMUS
Reuters	.IMUST	.IMUS
Thomson	.DAUST	.DJIMU
Thomson GlobalTopic	N/A	DJIMU.CT
Telekurs	IMUST	IMUS

Sector Allocation

Technology	27.17%
Health Care	18.98%
Consumer Goods	13.14%
Industrials	12.69%
Consumer Services	11.78%
Oil & Gas	9.40%
Basic Materials	3.48%
Financials	3.36%

Data calculated in USD as of end of June, 2016.

Sectors are based on the ten industries defined by the proprietary classification system as described at www.djindexes.com

Quick Facts

Component Number	Variable
Weighting	Float-adjusted market capitalization
Review Frequency	Quarterly
Base Value/Base Date	1000 as of December 29, 1995
Calculation Frequency	Every 5 minutes
Dividend Treatment	Price return and total return versions are available. The total return version of the index is calculated with net dividends reinvested.
Estimated Back-Tested History Availability	Available daily back to December 29, 1995
Launch Date	May 24, 1999

For more information on the Dow Jones Islamic Market™ U.S. Index,
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or call Americas +1.212.438.2046 | Asia +86.10.6569.2770 | EMEA : +44.20.7176.8888
Learn more at **www.djindexes.com.**

Dow Jones Islamic Market™ U.S. Index

Fact Sheet

All information as of end of June, 2016

Source: S&P Dow Jones Indices LLC.

The launch date of the Dow Jones Islamic Market™ U.S. Index was May 24, 1999.

All information presented prior to the index launch date is back-tested. Back-tested performance is not actual performance, but is hypothetical. The back-test calculations are based on the same methodology that was in effect when the index was officially launched. Past performance is not a guarantee of future results. Please see the Performance Disclosure at http://www.spindices.com/regulatory-affairs-disclaimers/ for more information regarding the inherent limitations associated with back-tested performance.

Ed 07-05-16, FACT-14-49-063016

S&P Dow Jones Indices

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Equity

S&P 500®

Description

The S&P 500® is widely regarded as the best single gauge of large-cap U.S. equities. There is over USD 7.8 trillion benchmarked to the index, with index assets comprising approximately USD 2.2 trillion of this total. The index includes 500 leading companies and captures approximately 80% coverage of available market capitalization.

Index Attributes

Created in 1957, the S&P 500 was the first U.S. market-cap-weighted stock market index. Today, it's the basis of many listed and over-the-counter investment instruments. This world-renowned index includes 500 of the top companies in leading industries of the U.S. economy.

The S&P 500 is part of a series of S&P Dow Jones U.S. equity indices that can be used as mutually exclusive building blocks; the index does not overlap holdings with the S&P MidCap 400® or S&P SmallCap 600®. Together, they constitute the S&P Composite 1500®.

Methodology Construction

- **Universe.** All constituents must be U.S. companies.
- **Eligibility Market Cap.** Companies with market cap of USD 5.3 billion or greater.
- **Public Float.** At least 50% of shares outstanding must be available for trading.
- **Financial Viability.** Companies must have positive as-reported earnings over the most recent quarter, as well as over the most recent four quarters (summed together).
- **Adequate Liquidity and Reasonable Price.** Consists of highly tradable common stocks, with active and deep markets.

Quick Facts

WEIGHTING METHOD	Float-adjusted market cap weighted
REBALANCING FREQUENCY	Quarterly, after the close on the third Friday of the quarter-ending month
CALCULATION FREQUENCY	Real time
CALCULATION CURRENCIES	USD, AUD, BRL, CAD, CHF, EUR, GBP, HKD, JPY, MXN, SGD
LAUNCH DATE	March 4, 1957

For more information, including the complete methodology document, please visit:
http://www.spindices.com/indices/equity/sp-500

All information for an index prior to its Launch Date is back-tested, based on the methodology that was in effect on the Launch Date. Back-tested performance, which is hypothetical and not actual performance, is subject to inherent limitations because it reflects application of an index methodology and selection of index constituents in hindsight. No theoretical approach can take into account all of the factors in the markets in general and the impact of decisions that might have been made during the actual operation of an index. Actual returns may differ from, and be lower than, back-tested returns.

S&P Dow Jones Indices

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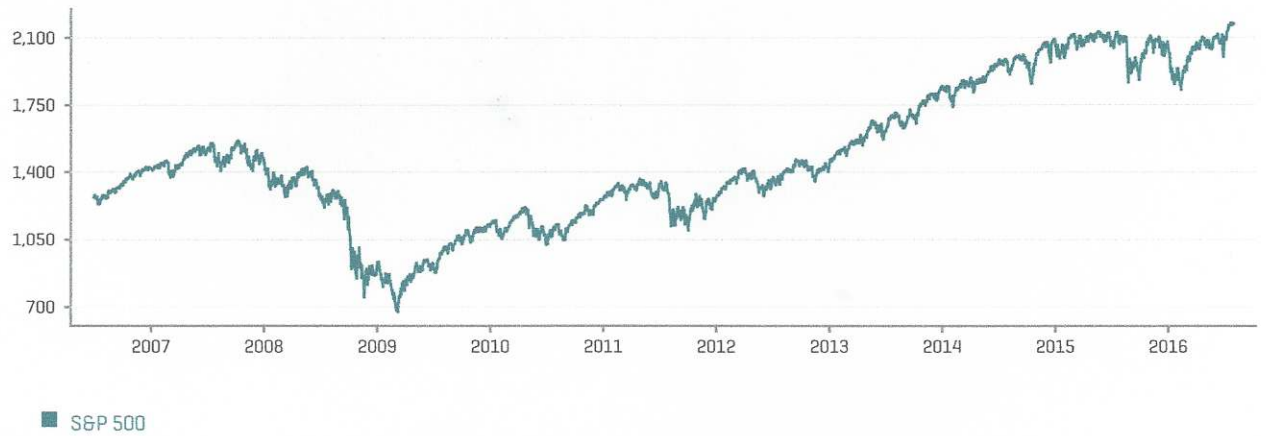
Equity
S&P 500®

Historical Performance



Performance

INDEX LEVEL	RETURNS			ANNUALIZED RETURNS			
	1 MO	3 MOS	YTD	1 YR	3 YRS	5 YRS	10 YRS
TOTAL RETURNS							
4,114.51	3.69%	5.82%	7.66%	5.61%	11.16%	13.38%	7.75%
PRICE RETURNS							
2,173.60	3.56%	5.24%	6.34%	3.32%	8.84%	10.96%	5.47%
NET TOTAL RETURNS							
3,721.03	3.65%	5.65%	7.27%	4.92%	10.46%	12.65%	7.06%

Calendar Year Performance

2015	2014	2013	2012	2011	2010	2009	2008	2007	2006
TOTAL RETURNS									
1.38%	13.69%	32.39%	16.00%	2.11%	15.06%	26.46%	-37.00%	5.49%	15.79%
PRICE RETURNS									
-0.73%	11.39%	29.60%	13.41%	0%	12.78%	23.45%	-38.49%	3.53%	13.62%
NET TOTAL RETURNS									
0.75%	12.99%	31.55%	15.22%	1.47%	14.37%	25.55%	-37.45%	4.90%	15.14%

Risk

ANNUALIZED RISK			ANNUALIZED RISK-ADJUSTED RETURNS		
3 YRS	5 YRS	10 YRS	3 YRS	5 YRS	10 YRS
STD DEV					
11.11%	12.08%	15.27%	1.00	1.11	0.51

Risk is defined as standard deviation calculated based on total returns using monthly values.

Fundamentals

P/E [TRAILING]	P/E [PROJECTED]	P/B	INDICATED DIV YIELD	P/SALES	P/CASH FLOW
23.83	16.71	2.77	2.18%	1.83	17.92

P/E [Projected] and Dividend Yield are as of June 30, 2016; P/E [Trailing], P/B, P/Sales, and P/Cash Flow are as of March 31, 2016. Fundamentals are updated on approximately the fifth business day of each month.

Index Characteristics

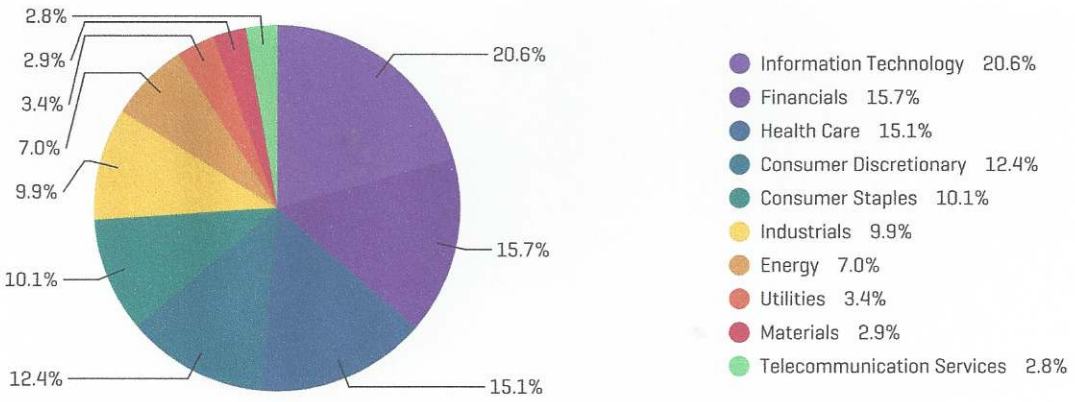
NUMBER OF CONSTITUENTS	505
CONSTITUENT MARKET CAP [USD MILLION]	
MEAN TOTAL MARKET CAP	39,110.03
LARGEST TOTAL MARKET CAP	570,802.46
SMALLEST TOTAL MARKET CAP	2,683.03
MEDIAN TOTAL MARKET CAP	18,513.30
WEIGHT LARGEST CONSTITUENT [%]	3.0
WEIGHT TOP 10 CONSTITUENTS [%]	17.9

Top 10 Constituents By Index Weight

CONSTITUENT	SYMBOL	SECTOR*
Apple Inc.	AAPL	Information Technology
Microsoft Corp	MSFT	Information Technology
Exxon Mobil Corp	XOM	Energy
Johnson & Johnson	JNJ	Health Care
Amazon.com Inc	AMZN	Consumer Discretionary
Facebook Inc A	FB	Information Technology
General Electric Co	GE	Industrials
Berkshire Hathaway B	BRK.B	Financials
AT&T Inc	T	Telecommunication Services
JP Morgan Chase & Co	JPM	Financials

*Based on GICS® sectors

Sector* Breakdown



*Based on GICS® sectors

The weightings for each sector of the index are rounded to the nearest tenth of a percent; therefore, the aggregate weights for the index may not equal 100%.

Country Breakdown

COUNTRY	NUMBER OF CONSTITUENTS	TOTAL MARKET CAP [USD MILLION]	INDEX WEIGHT [%]
United States	505	19,750,564.20	100.0

Based on index constituents' country of domicile.

Tickers

	TICKER	REUTERS
PRICE RETURNS	SPX	.SPFIV
TOTAL RETURNS	SPXT	.SPXT
NET TOTAL RETURNS	SPTR500N	.SPXNTR

Disclaimer

Source: S&P Dow Jones Indices LLC, a division of S&P Global.

The launch date of the S&P 500 was March 4, 1957.

All information presented prior to the index launch date is back-tested. Back-tested performance is not actual performance, but is hypothetical. The back-test calculations are based on the same methodology that was in effect when the index was officially launched. Past performance is not an indication or guarantee of future results. Please see the Performance Disclosure at http://www.spindices.com/regulatory-affairs-disclaimers/ for more information regarding the inherent limitations associated with back-tested performance.

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Description

The Dow Jones Sukuk Total Return (ex-Reinvestment) is designed to track the performance of global Islamic fixed income securities, also known as sukuk. The index measures an investment (excluding reinvestment) in U.S. dollar-denominated, investment-grade sukuk that have been screened for Shariah compliance.

Index Attributes

The Dow Jones Sukuk Total Return Index (ex-Reinvestment) seeks to measure the performance (excluding reinvestment) of Shariah-compliant fixed income securities, also known as sukuk, that are U.S. dollar-denominated, have a maturity greater than one year, and have an investment-grade rating from either Standard & Poor's Ratings Services, Moody's or Fitch, excluding reinvestment. This index is a subindex of the Dow Jones Sukuk Index.

Sukuk are Shariah-compliant fixed income instruments that are used by Islamic investors. Unlike conventional bonds, sukuk are based on a variety of contracts to create financial obligations, and the returns to investors are considered to be profit sharing, not interest. Sukuk are regarded as highly innovative financial instruments in Islamic finance, as they facilitate rapid infrastructure funding and capital market development.

"Shariah" refers to Islamic canonical law based on the teachings of the Koran, which observant Muslims adhere to in their daily lives. Shariah has certain restrictions regarding finance and commercial activities permitted for Muslims, including interest restrictions and prohibited industries. Islamic sukuk indices, like the Dow Jones Sukuk Index, comprise only Shariah-compliant sukuk.

Methodology Construction

This index is a subindex of the Dow Jones Sukuk Index. The methodology snapshot that follows applies to the Dow Jones Sukuk Index.

- **Universe.** To be included in the Dow Jones Sukuk Index, constituents must be U.S. dollar-denominated sukuk.
- **Instrument Type.** The index includes fixed and floating rate coupon instruments.
- **Optionality.** Bullet sukuk and sukuk with make-whole provisions are eligible for membership in the index.
- **Sukuk Flag.** Bonds must be flagged as "Sukuk" by Thomson Reuters in order to be eligible for index inclusion.
- **Issue Size (Amount Outstanding).** The issue size must be USD 200 million or greater.
- **Maturity.** Sukuk must have a minimum maturity of one year.
- **Rating.** Securities must be rated at least BBB-/Baa3 by Standard & Poor's Ratings Services, Moody's or Fitch. If a security is rated by more than one rating agency, the highest rating is used to determine eligibility in the appropriate quality-based index.

S&P Dow Jones Indices

An S&P Global Division

Fixed Income

DOW JONES SUKUK TOTAL RETURN INDEX (EX-REINVESTMENT)

Quick Facts

WEIGHTING METHOD	Market value weighted
REBALANCING FREQUENCY	Monthly
CALCULATION FREQUENCY	End of day
CALCULATION CURRENCIES	USD, CAD, CHF, CNY, EUR, GBP, JPY, SGD
LAUNCH DATE	April 28, 2006
FIRST VALUE DATE	September 30, 2005

For more information, including the complete methodology document, please visit:
http://www.spindices.com/indices/fixed-income/dow-jones-sukuk-total-return-index-ex-reinvestment

All information for an index prior to its Launch Date is back-tested, based on the methodology that was in effect on the Launch Date. Back-tested performance, which is hypothetical and not actual performance, is subject to inherent limitations because it reflects application of an Index methodology and selection of index constituents in hindsight. No theoretical approach can take into account all of the factors in the markets in general and the impact of decisions that might have been made during the actual operation of an index. Actual returns may differ from, and be lower than, back-tested returns.

Historical Performance

* Data has been re-based at 100

Performance

INDEX LEVEL	RETURNS			ANNUALIZED RETURNS			
	1 MO	3 MOS	YTD	1 YR	3 YRS	5 YRS	10 YRS
TOTAL RETURNS							
162.42	0.62%	1.90%	5.20%	4.47%	4.68%	4.31%	4.53%
BENCHMARK* TOTAL RETURNS							
110.52	1.36%	0.33%	2.56%	2.09%	3.47%	3.41%	N/A

* The index benchmark is the S&P Pan Asia Bond Index

Calendar Year Performance

2015	2014	2013	2012	2011	2010	2009	2008	2007	2006
TOTAL RETURNS									
1.24%	6.37%	0.23%	8.00%	5.47%	9.40%	27.13%	-18.73%	3.81%	5.74%
BENCHMARK* TOTAL RETURNS									
1.45%	6.73%	-0.30%	6.91%	4.51%	8.51%	3.15%	6.13%	8.73%	N/A

* The index benchmark is the S&P Pan Asia Bond Index

Risk

ANNUALIZED RISK			ANNUALIZED RISK-ADJUSTED RETURNS		
3 YRS	5 YRS	10 YRS	3 YRS	5 YRS	10 YRS
STD DEV					
2.56%	2.68%	7.61%	1.83	1.61	0.60
BENCHMARK* STD DEV					
3.99%	4.04%	N/A	0.87	0.84	N/A

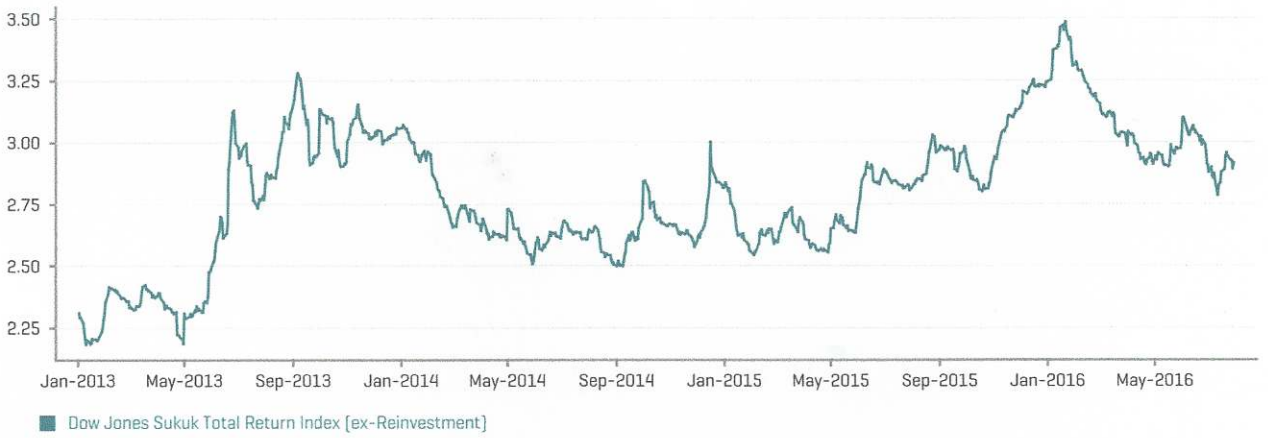
Risk is defined as standard deviation calculated based on total returns using monthly values.

* The index benchmark is the S&P Pan Asia Bond Index

Index Characteristics

MARKET VALUE OUTSTANDING [USD MILLION]	63,728.92
NUMBER OF CONSTITUENTS	71
TOTAL PAR VALUE	61,500
PAR WEIGHTED COUPON	3.50%
WEIGHTED AVERAGE MATURITY	5.93 Yrs
PAR WEIGHTED PRICE	102.57
YIELD TO MATURITY	2.92%
YIELD TO WORST	2.92%
MODIFIED DURATION	4.76
10-YEAR HISTORICAL INDEX LEVEL HIGH [JULY 11, 2016]	163.01
10-YEAR HISTORICAL INDEX LEVEL LOW [FEBRUARY 09, 2009]	86.74

Historical Yield To Worst



Tickers

	TICKER	REUTERS
TOTAL RETURNS	DJSUKTXR	N/A

Disclaimer

Source: S&P Dow Jones Indices LLC, a division of S&P Global.

The launch date of the Dow Jones Sukuk Total Return Index (ex-Reinvestment) was April 28, 2006. The launch date of the S&P Pan Asia Bond Index was December 31, 2013. The launch date of the S&P U.S. Treasury Bond Index was March 24, 2010.

All information presented prior to the index launch date is back-tested. Back-tested performance is not actual performance, but is hypothetical. The back-test calculations are based on the same methodology that was in effect when the index was officially launched. Past performance is not an indication or guarantee of future results. Please see the Performance Disclosure at http://www.spindices.com/regulatory-affairs-disclaimers/ for more information regarding the inherent limitations associated with back-tested performance.

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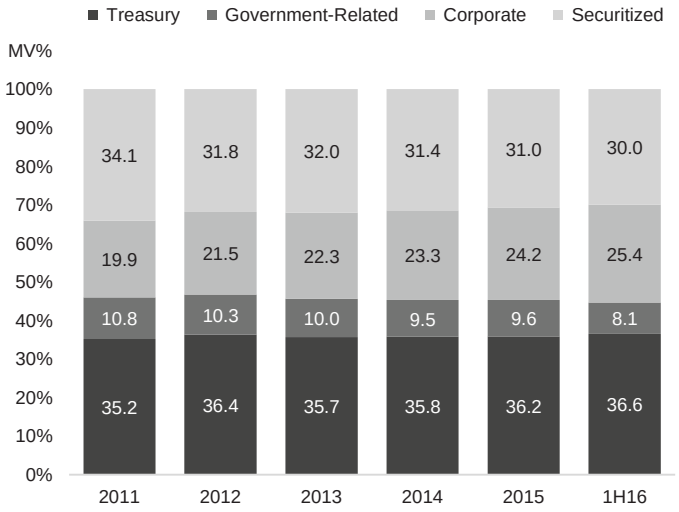
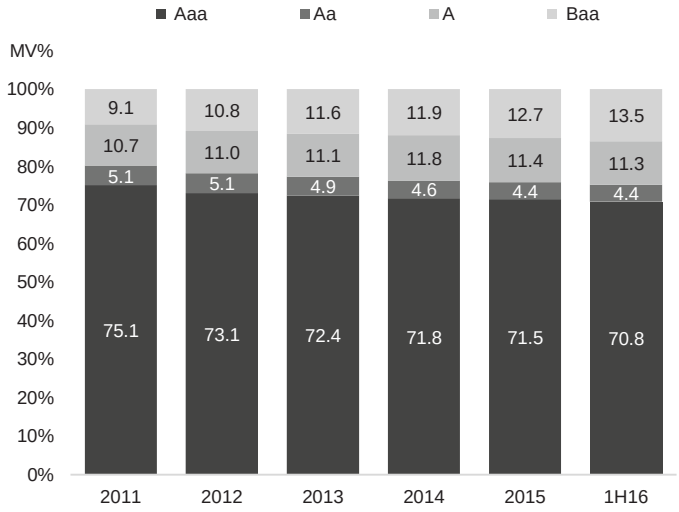
US Aggregate Index

The Bloomberg Barclays US Aggregate Bond Index is a broad-based flagship benchmark that measures the investment grade, US dollar-denominated, fixed-rate taxable bond market. The index includes Treasuries, government-related and corporate securities, MBS (agency fixed-rate and hybrid ARM pass-throughs), ABS and CMBS (agency and non-agency). Provided the necessary inclusion rules are met, US Aggregate-eligible securities also contribute to the multi-currency Global Aggregate Index and the US Universal Index, which includes high yield and emerging markets debt. The US Aggregate Index was created in 1986 with history backfilled to January 1, 1976.

Historical Composition by Sector (MV%) – Trailing 5 Years



Historical Composition by Quality (MV%) – Trailing 5 Years



Rules for Inclusion

Eligible Currencies	Principal and interest must be denominated in USD.
Quality	Securities must be rated investment grade (Baa3/BBB–/BBB– or higher) using the middle rating of Moody's, S&P and Fitch; when a rating from only two agencies is available, the lower is used; when only one agency rates a bond, that rating is used. In cases where explicit bond level ratings may not be available, other sources may be used to classify securities by credit quality: • Local currency treasury and hard currency sovereign issues are classified using the middle issuer level rating from each agency for all outstanding bonds, even if bond level ratings are available. • Expected ratings at issuance may be used to ensure timely index inclusion or to properly classify split-rated issuers. • Unrated securities may use an issuer rating for index classification purposes if available. Unrated subordinated securities are included if a subordinated issuer rating is available.
Coupon	• Fixed-rate coupon. • Callable fixed-to-floating rate bonds are eligible during their fixed-rate term only. • Bonds with a step-up coupon that changes according to a predetermined schedule are eligible. • Hybrid ARMs are index-eligible during their fixed term, but exit one year prior to their conversion to adjustable rate.

Rules for Inclusion

Amount Outstanding

- For Treasury, government–related and corporate securities, USD250mn minimum par amount outstanding.
- For MBS pass–throughs, pool aggregates must have USD1bn par amount outstanding.
- For ABS, USD500mn minimum deal size and USD25mn minimum tranche size.
- For CMBS, USD500mn minimum deal size with at least USD300mn amount outstanding remaining in the deal and USD25mn minimum tranche size.
- US Treasuries held in the Federal Reserve SOMA account (both purchases at issuance and net secondary market transactions) are deducted from the total amount outstanding. New issuance bought at auction by the Federal Reserve does not enter the index. Net secondary market purchases/sales are adjusted at each month–end with a one–month lag.

Maturity

- At least one year until final maturity, regardless of optionality.
- MBS must have a weighted average maturity of at least one year. CMBS and ABS must have a remaining average life of at least one year.
- Bonds that convert from fixed to floating rate, including fixed–to–float perpetuals, will exit the index one year prior to conversion to floating–rate. Fixed–rate perpetuals are not included.
- Sub–indices based on maturity are inclusive of lower bounds. Intermediate maturity bands include bonds with maturities of 1 to 9.999 years. Long maturity bands include maturities of 10 years or greater.

Market of Issue

- SEC–registered securities, bonds exempt from registration at the time of issuance and SEC Rule 144A securities with registration rights are eligible. A security with both SEC Regulation–S (Reg–S) and SEC Rule 144A tranches is treated as one security for index purposes. The 144A tranche is used to prevent double–counting and represents the combined amount outstanding of the 144A and Reg–S tranches.
- Global bonds are included.
- Bonds that were previously SEC–registered or 144A with registration rights but later deregistered by the issuer remain index eligible.

Seniority of Debt

Senior and subordinated issues are included.

Taxability

- Only fully taxable issues are eligible.
- Build America Bonds (BAB) with the tax credit to the issuer are eligible; those with tax credits issued to investors are considered tax exempt.
- Dividend Received Deduction (DRD) and Qualified Dividend Income (QDI) eligible securities are excluded.

Security Types

Included

- Bullet, putable, sinkable/amortizing and callable bonds
- Taxable municipal securities, including Build America Bonds (BAB)
- Original issue zero coupon and underwritten MTN
- Enhanced equipment trust certificates (EETC)
- Certificates of deposit
- Fixed–rate and fixed–to–float (including fixed–to–variable) capital securities
- Covered bonds (as of January 1, 2011)
- US agency CMBS (as of July 1, 2014)

Excluded

- Contingent capital securities, including traditional CoCos and contingent write–down securities
- Bonds with equity type features (eg, warrants, convertibles, preferreds, DRD/QDI–eligible issues)
- Tax–exempt municipal securities
- Inflation–linked bonds, floating–rate issues
- Private placements, retail bonds
- USD25/USD50 par bonds
- Structured notes, pass–through certificates
- Non–ERISA eligible CMBS issues
- CMBS A1A tranches (as of January 1, 2011)
- Illiquid securities with no available internal or third–party pricing source

Rebalancing Rules

Frequency	For each index, Bloomberg maintains two universes of securities: the Returns (Backward) and the Projected (Forward) Universes. The composition of the Returns Universe is rebalanced at each month–end and represents the fixed set of bonds on which index returns are calculated for the next month. The Projected Universe is a forward–looking projection that changes daily to reflect issues dropping out of and entering the index but is not used for return calculations. On the last business day of the month (the rebalancing date), the composition of the latest Projected Universe becomes the Returns Universe for the following month.
Index Changes	During the month, indicative changes to securities (credit rating change, sector reclassification, amount outstanding changes, corporate actions, and ticker changes) are reflected daily in the Projected and Returns Universe of the index. These changes may cause bonds to enter or fall out of the Projected Universe of the index on a daily basis, but will affect the composition of the Returns Universe at month–end only, when the index is next rebalanced.
Reinvestment of Cash Flows	Intra–month cash flows from interest and principal payments contribute to monthly index returns but are not reinvested at a short–term reinvestment rate between rebalance dates. At each rebalancing, cash is effectively reinvested into the returns universe for the following month so that index results over two or more months reflect monthly compounding.
New Issues	Qualifying securities issued, but not necessarily settled on or before the month–end rebalancing date, qualify for inclusion in the following month's index if the required security reference information and pricing are readily available.

Pricing and Related Issues

Sources & Frequency	All index–eligible bonds are priced on a daily basis by either Barclays market makers or Bloomberg's evaluated pricing service, BVAL. Pricing sources by sector: • Treasury: priced by Barclays market makers on a daily basis. • Corporate: all bonds are marked by Barclays market makers at mid–month and month–end. Up to 3,000 actively traded benchmark corporate securities are priced by Barclays market makers on a daily basis. Less liquid bonds are priced using an OAS model or issuer curve that is generated using these actively quoted benchmark securities. • Government–Related: a subset of approximately 200 liquid US agency debentures is priced by Barclays market makers on a daily basis, with the remaining bonds model–priced using trader marks and updated curves. The remainder of the government–related sector is priced by a combination of Barclays market makers and other third party sources. Taxable municipal bonds are priced solely by BVAL. • MBS Fixed–Rate: TBAs are priced by Barclays market makers on a daily basis, with index pool aggregate prices derived from these marks. A pay–up to the forward price of the associated TBA by program and coupon is assigned based on vintage. The TBA and pay–up quote is then discounted back to same day settle to arrive at an index price. Pay–ups are updated on an as–needed basis by the Barclays trading desk. • MBS Hybrid ARMs: hybrid ARM generics are priced daily by taking a weighted average price of the universe of pools underlying a given generic. Hybrid ARM pools are priced by BVAL on a same day settlement basis. • ABS: securities are marked by Barclays market makers on a weekly and month–end basis. From those prices, a spread for each security is calculated and kept constant until the next update. The daily updated swap curve is used to convert the spreads to dollar prices on a daily basis. • Non–Agency CMBS: securities are marked by Barclays using a pricing matrix comprising the following buckets: average life, origination year, original rating and tranche type. The majority of bonds are marked in the spread matrix to a swap curve; however, they may also be valued using price–based buckets in the matrix. This sector is scheduled to move to BVAL in September 2016. • Agency CMBS: bonds are priced by BVAL. • Covered: bonds are priced by Barclays market makers on a daily basis. A third–party pricing source may be used for bonds where no internal price source is available. *As previously announced, some index sectors will migrate to a different pricing source between August and November 2016. At the time of this publication, new pricing sources have not been announced for all sectors.*
Pricing Quotes	Bonds can be quoted in a variety of ways, including nominal spreads over benchmark securities/treasuries,

Pricing and Related Issues

	spreads over swap curves, or direct price quotes as a percentage of par. For securities quoted on a spread basis, daily security price changes will result from movements in the underlying curve (swap or treasury) and/or changes in the quoted spread. Prices from third–party sources are quoted as a percentage of par.
Timing	• 3pm (New York time) for all securities except taxable municipal bonds which use 4pm (New York time). • On early market closes, prices are taken as of 1pm (New York time), unless otherwise noted. • If the last business day of the month is a public holiday, prices from the previous business day are used.
Bid or Offer Side	Bonds in the index are priced on the bid side. The initial price for new corporate issues entering the index is the offer side; after the first month, the bid price is used.
Settlement Assumptions	T+1 calendar day settlement basis for all bonds except MBS, which are priced for Public Securities Association (PSA) settlement in the following month and discounted back to same–day settlement. At month–end, settlement is assumed to be the first calendar day of the following month, even if the last business day is not the last day of the month, to allow for one full month of accrued interested to be calculated.
Verification	Daily price moves for each security are analyzed by the index pricing team to identify outliers. Index users may also challenge price levels, which are then reviewed and updated as needed using input from various sources.
Currency Hedging	Returns hedged to various non–USD currencies are published for the US Aggregate Index. The indices' FX hedging methodology takes rolling one–month forward contracts that are reset at the end of each month and hedges each non–reporting currency–denominated bond in the index into the reporting currency terms. No adjustment is made to the hedge during the month to account for price movements of constituent securities in the returns universe of the index.
Calendar	The US Aggregate Index follows the US bond market holiday schedule.

Monthly Returns in USD, 2006-2016 (%)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD
2006	0.01	0.33	–0.98	–0.18	–0.11	0.21	1.35	1.53	0.88	0.66	1.16	–0.58	4.33
2007	–0.04	1.54	0.00	0.54	–0.76	–0.30	0.83	1.23	0.76	0.90	1.80	0.28	6.97
2008	1.68	0.14	0.34	–0.21	–0.73	–0.08	–0.08	0.95	–1.34	–2.36	3.25	3.73	5.24
2009	–0.88	–0.38	1.39	0.48	0.73	0.57	1.61	1.04	1.05	0.49	1.29	–1.56	5.93
2010	1.53	0.37	–0.12	1.04	0.84	1.57	1.07	1.29	0.11	0.36	–0.57	–1.08	6.54
2011	0.12	0.25	0.06	1.27	1.31	–0.29	1.59	1.46	0.73	0.11	–0.09	1.10	7.84
2012	0.88	–0.02	–0.55	1.11	0.90	0.04	1.38	0.07	0.14	0.20	0.16	–0.14	4.21
2013	–0.70	0.50	0.08	1.01	–1.78	–1.55	0.14	–0.51	0.95	0.81	–0.37	–0.57	–2.02
2014	1.48	0.53	–0.17	0.84	1.14	0.05	–0.25	1.10	–0.68	0.98	0.71	0.09	5.97
2015	2.10	–0.94	0.46	–0.36	–0.24	–1.09	0.70	–0.14	0.68	0.02	–0.26	–0.32	1.14
2016	1.38	0.71	0.92	0.38	0.03	1.80	–	–	–	–	–	–	5.31

Index History

July 1, 2014	US Agency CMBS added to the index.
April 1, 2014	Minimum liquidity for US MBS Index constituents raised from USD250mn to USD1bn.
April 1, 2013	Loan participation notes (LPNs) eligible for the index.
May 1, 2012	Issuer eligibility for fixed–rate ABS no longer based on a predefined list of "eligible" issuers.
January 1, 2011	Covered bonds become eligible. A1A tranches are removed from the CMBS portion of the index.
October 1, 2009	US ABS home equity sector removed from the index.
January 1, 2008	Fixed–to–floating rate perpetual securities without a coupon step–up on their first call date eligible for inclusion. US MBS fixed–rate balloons and US ABS manufactured housing removed.
April 1, 2007	Agency Hybrid Adjustable Rate Mortgage (ARM) securities added to the index, but not eligible for the Global Aggregate.
July 1, 2005	Fitch ratings added to Moody's and S&P to determine index eligibility based on the middle rating from each agency.
July 1, 2004	Liquidity constraint raised to USD250mn/USD25mn CMBS tranche size from USD200mn.
October 1, 2003	Liquidity constraint raised to USD200mn from USD150mn. Capital and senior unsecured securities with fixed–to–variable coupons added to the index. Lower of Moody's and S&P rating used to determine index eligibility; previously, Moody's was used as the primary rating with S&P rating used in cases where a Moody's rating was unavailable.
July 1, 2000	ABS liquidity constraint raised to USD500mn for deal size and USD25mn for tranche size. Absorbed all Yankee corporates into their respective industry and sector classification.
July 1, 1999	Liquidity constraint raised to USD150mn from USD100mn. ERISA–eligible CMBS issues added to the index.
January 1, 1998	Removed US TIPS from US Aggregate Index.
January 1, 1994	Liquidity constraint raised to USD100mn from USD50mn for non–government securities.
January 1, 1992	ABS and MBS balloon issues added to the index. Liquidity constraint increased to USD50mn from USD25mn for non–government securities.
January 1, 1990	Liquidity constraint raised to USD100mn from USD25mn for government issues.
August 1, 1988	Liquidity constraint raised to USD25mn from USD1mn for corporate issues.
January 1, 1986	US Aggregate Index introduced, with historical data backfilled to January 1976.

Sub-indices and Index Customizations

Bloomberg publishes numerous sub-indices of flagship indices and bespoke benchmarks created for specific index users. Several types of bespoke indices are available to select or customize the most appropriate benchmark for specific portfolio needs:

Sub-Index Type	Description	Examples
Enhanced Constraint	Applies a more or less stringent set of constraints to any existing index.	• US Aggregate ex Baa • US Aggregate 1–3 Year
Composites	Investors assign their own weights to sectors or other index sub-components within an overall index.	• 50% US Aggregate; 50% Euro Aggregate • 30% US Government-Related; 70% US MBS
Issuer Constrained	Indices that cap issuer exposure to a fixed percentage. Options available for applying issuer caps and redistributing excess MV to other issuers.	• US Credit 2% Issuer Capped
Float Adjusted	Adjusts par amount outstanding of bonds for holdings of central governments that are publicly available.	• US Aggregate Float Adjusted
ESG Screened/Weighted	Applies Environmental, Social and Governance filters and/or tilts to a standard index.	• US Aggregate Socially Responsible Index • US Aggregate ESG Weighted
Mirror Futures Index (MFI)	An index consisting of 14 funded futures contracts weighted to match closely the beginning-of-month OAD of the index.	• US Aggregate Mirror Futures Index
Duration Hedged	Indices constructed to reflect the underlying return of an index with its duration fully or partially hedged using its MFI.	• US Aggregate Duration Hedged Index

Accessing Index Data

Bloomberg Professional® service	Bloomberg benchmarks are the global standard for capital markets investors. • INDEX<Go> – The Bloomberg Indices landing page is a dashboard for index-related information on the terminal. Find daily and monthly index returns for key indices from each index family as well as index publications including methodologies, factsheets, monthly reports, updates and alerts. • IN<Go> – The Bloomberg Index Browser displays the latest performance results and statistics for the indices as well as history. IN presents the indices that make up Bloomberg's global, multi-asset class index families into a hierarchical view, facilitating navigation and comparisons. The "My Indices" tab allows a user to focus on a set of favorite indices. • PORT<Go> – Bloomberg's Portfolio & Risk Analytics solution includes tools to analyze the risk, return, and current structure of indices. Analyze the performance of a portfolio versus a benchmark or use models for performance attribution, tracking error analysis, value-at-risk, scenario analysis, and optimization. • DES<Go> – The index description page provides transparency into an individual index including membership information, aggregated characteristics and returns, and historical performance.
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Bloomberg Total Return Index Value Tickers: US Aggregate and Related Indices

Ticker (USD Unhedged)	Index	Ticker (USD Unhedged)	Index
LBUSTRUU	US Aggregate Index	LU3ATRUU	US Aggregate Aaa
LC08TRUU	US Intermediate Aggregate	LU2ATRUU	US Aggregate Aa
LU13TRUU	US Aggregate 1–3 Year	LU1ATRUU	US Aggregate A
LU35TRUU	US Aggregate 3–5 Year	LUBATRUU	US Aggregate Baa
LU57TRUU	US Aggregate 5–7 Year	LUGCTRUU	US Government/Credit
LU71TRUU	US Aggregate 7–10 Year	LF97TRUU	US Intermediate Government/Credit
LU10TRUU	US Aggregate 10+ Year	LGC5TRUU	US Long Government/Credit

Total Return Index Values are available in other currencies and on a hedged basis. Attributes such as yield and duration, are also available. Please refer to Accessing Bloomberg Barclays Index Data Using Bloomberg Tickers for a full list of tickers and attributes that are available.

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